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I N D E X.

- Acacias, 386
 Accidental characters, inheritance of, 77
 Aconites, Winter, 17
 Adiantums—cuneatum culture, 4; Farleyense, 153
 Aërides Houlettianum, 450
 Agave attenuata, 392
 Agricultural College, Edinburgh, 412
 Agriculture, Chinese, 426
 Alliston, the late Mr. John, 239
 Alocasia odora, 393
 Alocasias potting, 125
 Alpine plants, destruction of, 211
 Amaryllises—from seeds, 65; formosissima, 148
 American irrigation project, 244
 Androsace Chumbiense, 440
 An Embankment idyll, 223, 239
 Angræcums—eburneum, 235; fastuosum, 297
 Annuals, some useful, 366
 A nonagenarian gardener, 224
 A novelty garden, 244
 Aotus villosa, 164
 Aphis, the Cherry, 380
 Apple and Pear culture, 199 the prince of fruits, 306
 Apples—Borsdörfer, 22; plethora of varieties, 11; Lane's Prince Albert, 59, 95; late, 88, 175; storage, 99; Claygate Pearmain, 122; in India, 115; Emperor Alexander, 137; seedling, 175; Diamond Jubilee, 199; Lamb Abbey Pearmain, 243, 235; Lane's Prince Albert, 265; late keeping culinary, 265, 286, 307, 329; and other fruit, why drop, 285; the John, 395; cider, 417; brown rot fungus on, 483; blossom malformed, 498; cancer on, 521
 Appointments—Mr. C. Hewitt, 243; Mr. T. Singleton, 243; Mr. T. F. Jones, 261; Mr. J. P. Kendall, 261; Mr. H. Plumeridge, 261; Mr. J. G. Duncan, 324; Mr. J. C. Douglas, 324; Mr. L. Bayley, 347; Mr. J. T. Burditt, 347; Mr. Wilkinson, 347; Mr. F. Linsdell, 368; Mr. H. Taylor, 368; Mr. G. Cypher, 412; Mr. Chas. W. Head, 412; Mr. E. Horton, 412; Mr. H. Naylor, 455; Mr. W. F. Gullick, 477; Mr. James Davis, 520; Mr. J. Kelly, 520; Mr. J. Caswell, 520; Mr. Thos. Cook, 540; Mr. J. McClean, 540; Mr. J. Weathers, 540
 Apricots, notes on, 123
 April, hardy flowers of, 372
 A protector novelty, 227, 258
 Aquatics, 320; notes on, 482
 Arabis, a double, 429
 Aralia spinosa, 416
 Ardlui, 76
 Artichokes—poison in, 10; Jerusalem, 55
 Art, our ancient, 172
 Asparagus—forcing, 16; soil for, 59; dressing roots with Bordeaux mixture, 84; treatment of, 46; monster, at Evesham, 476; depth of planting, 511
 Asparagus plumosus, 328
 Associations—East Anglian Horticultural, 245; Hesse Gardeners, 245; Newport (Dundee) Horticultural, 245
 A Strawberry support, 239
 Attendants at Drill Hall exhibitions, 243
 Aucubas, variegated, propagating, 104
 Auricula—the, 241, 307; virtuosos, 414
 Awake! 362
 Balancing the growth of Peach trees, 236, 307
 Ballimore, Argyllshire, 304
 Bananas, a good bunch of, 239
 Barberry, the, as a hedge shrub, 306
 Basic slag and finger and toe, 14
 Baskets for winter, 59
 Battle of the Embankment, 266
 Beans, Runner, staking, 499
 Bedding designs—carpet, 314, 412; in London parks, 520
 Beech, a plea for the, 14; planting, 145; seedlings as a salad, 390
 Bees—grading honey, 19; unsold honey, 19
 Beet in the States, 244
 Beetles, Rove, 444
 Beetroot tumour, 420
 Begonias—tuberous rooted, 20; Caladonia, 48; tubercous, for bedding, 78; for exhibition, 84; in baskets, 79; winter flowering, 77; fuchsoides, 133; Gloire de Lorraine, 314; Queen Alexandra, 440; Mrs. W. G. Valentine, 440; Mrs. H. Clark, 440
 Belvoir Castle, weather at, 301
 Benevolent Institution, Gardeners' Royal, 430
 Berberis Thunbergi, 178
 Birds, Australian, 391
 Birthday notes, 129
 Bladder Wrack, 524
 Bloom of the fruit, fatal, 266
 Boiler, saddle, heating power of, 336
 Book gardeners, 33, 73, 115, 195
 Book notice—"Thompson's Gardener's Assistant," 3, 260, 428; "The British Gardener," 418; "Gardening for Beginners," 539; "A Practical Guide to Garden Plants," 181
 Borders, watering Vine, 327; herbaceous, 367
 Botanical Gardens—Edinburgh, 206, 232; Edgbaston, 255; Missouri, 393, 492
 Botanical problem, a, 416
 Botany, the value of, in the garden, 254
 Brassia verrucosa, 184
 Brayton Hall, Cumberland, 522
 Bridesmaids and flowers, 521
 Briton, the, and his commercial rivals, 286
 Broccoli all the winter, 350
 Bulb—trade, French, 346; industry in East Anglia, 391
 Burning question, the, 23
 Business, the influence of, 361
 Butley Tulip Show, 507
 Cacti at the Temple Show, 433
 Caladiums, 429
 Calanthes—starting, 47; gigas, 129
 Calceolarias—shrubby, 280; from Altrincham, 430
 "Calvary Clover," 314
 Camellias—outdoor, at the new year, 37; treatment of, 42; revival of, 55; grafting, 85; largest tree in Britain, 124; for Aberdeen parks, 279
 Cannas—Oscar Dannecker, 486; Grasseherzog Ernst L. von Hessen, 486; Jean Tissot, 486; Elizabeth Hoss, 486; list of varieties, 524
 Carnations—the Lawson, 416; Sir Hector MacDonald, 440; and Picotees, 282; seedling tree, 402; hybrid, 421; artificial pollination of, 416; notes on, 480; Malmaison, 457
 Carrots, early, 104, 222
 Catalogues—old, a peep into, 48; horticultural, 74; a handsome Orchid, 430
 Cattleyas—Dowiana Rosita, 5; Prince of Wales, 25; Mendeli Queen Alexandra, 409; Mendeli gigantea, 439; Mendeli Mrs. R. Tunstill, 439; Mossiae Mrs. F. W. Ashton, 483; Aclandiae, 537
 Cauliflowers, early, 526
 Cedars, the, 392, 449
 Celery, early, 184
 Certificated plants, 56, 93, 150, 190, 264, 330, 460, 518
 Chamberlain, Right Hon. Joseph, M.P., and his Orchids, 515
 Chelsea Physic Garden, 110
 Cherry—house, the, 123, 163; crop in danger, 143, 152
 Cherry tree feeding on itself, 266
 Chimonanthus fragrans in pots, 43
 Chironias, 77
 Chorizemas, 411, 483
 Chrysanthemums—damp, 3; decorative, 33, 73; feeding, 11; late, 16; suggestions for 1901, 16; Japanese, 52; Mutual Friend, 52; Veltha for rust, 52, 104; N.C.S. annual meeting, 120; rust, 103; spots on, 124; bush, 139; rooting cuttings, 139; manipulating florets, 172; specimen, 170; decorative, 308; seasonable notes on, 308, 420, 453; meritorious new varieties, 384; outdoor, 420; leaves diseased, 445
 Chysis Chelsoni, 255
 Cider exhibition at Croydon, 526
 Cinerarias—double, 209; at Impney, 258; Cactus, 410
 Cleaning houses, 59
 Clematis, transplanting, 64
 Climbers—for stove and greenhouse, 42; for garden arches, 358; hardy, 380
 Cocoa-nut fibre refuse, 21
 Coelia macrostachya, 493
 Cœlogynes—cristata, repotting, 104; treatment of, 149; pandurata, 235; 275; cristata, 385
 Coleus, a new winter flowering, 224; from seeds, 253
 College Gardens, St. John's, Oxford, 545
 Coniferae, 179, 212, 256, 475
 Conifers as rain gauges, 158; fossilised, 454
 Cooke, Mr. S., death of, 53
 Cool house Orchids, 235
 Coping for walls, 503, 525
 Copse culture, decay of, 235
 Correas, 410
 Correspondence, private, 273
 Cotoneaster Simmonsii, 42
 Cranberry growing, 158; cultivated, 325
 Crops, the weather and, 260; unsatisfactory, 549
 Crowea saligna major, 30
 Croweas, 410
 Crowley, Mr. P., the late, 9
 Cucumber "Famous," 440
 Cucumbers—winter, 6; and Melons, notes on, 62, 123, 163; and Tomato-eelworm, 184; successes and failures, 238, 286; not swelling, 380

Cumberland, mild weather in, 477
 Currants, Red and White, 60, 480
 Cyclamens—persicum not throwing up flowers, 64; flowers indifferent, 125; leaves crippled, 164, 209
 Cycle gleanings, 516
 Cyclopedia of American Gardening, 320
 Cymbidium grandiflorum culture, 210; eburneo-Lowianum, 363
 Cypher, Mrs. J., death of, 153
 Cypripedium—insigne, 47, 319; Lee-anum, 47; Gertrude Hollington, 89; T. W. Bond, Coundon Court variety, 169; Lord Derby, Sanders' var., 255; Mastersianum, 297; Exul, Joicey's var., 311
 Cytisus Ardoini, 99; culture, 410

Dædalacanthus nervosus, 138
 Daffodil, parts of a, 402
 Daffodils—fair, 267; for the rockery, 287; poor prices for, 368; at Long Ditton, 374
 Dahlem Botanical Garden, 244
 Dahlias—National Dahlia Society, annual meeting, 40; a flower of the 19th century, 147; the, 175; analysis, 406; notes on, 480
 Darlingtonia californica, 387
 Decorations, table, 222, 481; floral, 418, 450
 Dendrobiums—Schneiderianum, 47, 493; thyrsoflorum, 47; rubens, 129; Farmeri, 210; Wardianum, 210; undulatum, 235; lituiflorum, 27; Boxalli, 319; splendissimum, 319; Brymerianum, 341; pulchellum, 409; Fytchianum, 450; Victoria Regina, 450; transparens, 493
 Dessert fruits, late, 209
 Deutzia crenata flore-pleno, 20
 Devonshire, fruit in, 222
 Dew, 158
 "Dictionary of Gardening," Cassell's, 455
 Difference, points of, 253
 Digging, winter, 52
 Diospyros Kaki, 189
 Dipladenia culture, 370
 Disas, notes on, 109
 Domain, young gardeners'—thoughts for young thinkers, 18; Christmas decorations, 41; thanks to "A. O. B.," 41, 81; "An Old Boy" speaks, 63; crocks and pots, 81; look at your book, 122; Poinsettias, 122; Grevillea robusta, 143; hints on Strawberry forcing, 182; his first charge, 269; Hippeastrums, 314; list of books in library, Sion House Gardens, 422; Primula stellata, 442
 "Don'ts" for Grape thinners, 416
 Douglas, jun., Mr., death of, 71
 Drill Hall exhibitions, attendants at, 243
 Dunkeld House, 156
 Dunnett, estate of the late Mr., 278

Early Potatoes, 242, 307
 East Anglian Horticultural Club, 145
 Easter, 277
 Edenhall, Cumberland, 414
 Elworm in houses, 144
 Empirical gardening, 245
 Englishmen the largest consumers of jam? 261
 Epacris, 364
 Epacris—culture of, 70; elegans, 70; miniata splendens, 70
 Epidendrum—atro-purpureum, 109; E. Wallisi, 275; x Clarissa superba, 341

Eranthemum pulchellum, 168
 Eranthis hyemalis, 17
 Ericas—hardy spring flowering, 282, 340, 364; carnea and c. alba, 480
 Eriostemons, 410
 Eucharis—amazonica, 29; grandiflora, 144
 Evergreens, pruning broad-leaved at transplanting, 524
 Evolutionist, birthday of a great, 368
 Exacum macranthum, 181
 Exhibitor, who was the? 329
 Exhibitors as committeemen, 541

Fair Daffodils, 267
 Farm—Christmas prices, 22; the pure beer question, 22; fatal supineness, 44; training farms for young gardeners, 44; the proper housing of stock, 66; new Agricultural Holdings Act, 66; where we fall short, 86; seed Barley, 106; two good investments, 106; agricultural education in Canada, 126; manures—what to buy, 146; a good hay crop, 165; more about fertilisers, 185; sugar Beet culture, 186; illustrious farmers, 203; price of seeds, 231; up in town, 251; advance in rural teaching, 272; estate reform, 272; Egyptian agriculture, 293; field culture of Potatoes, 316; the pity of it, 337; the sundries, 360; Mr. Rider Haggard on tour, 382; the profits of a flock of sheep, 403; more about the cow, 425; the veterinary surgeon, 446; out at grass, 467; pigs and piggeries, 490; Bath and West, 512; the improvement of cereals, 512; vegetation and environment, 512; the shows, 534; the future of British wool, 534; graziers' difficulties, 534; Edinburgh, Glasgow, and adjacent parts, 550; work on the home farm, 22, 44, 66, 86, 106, 126, 146, 166, 186, 204, 232, 252, 272, 294, 316, 338, 360, 382, 404, 426, 446, 468, 490, 512, 534, 550

Farningham site, the, 252
 February flowers, 198
 Fences, plant, 306
 Fen district, the, 245
 Fenn, Mrs. Robert, death of, 173
 Ferns—in cork pouches, 4; in hanging baskets, 4; Maidenhair, culture of, 4; on stones, 4; Filmy, 296
 Fibre cultivation, 455
 Ficus elastica, propagating, 105
 Figs under glass, 15, 70, 112, 161; late, 165, 184, 197, 246, 319, 400, 504
 Finger and toe and basic slag, 14
 Fish and poultry offal for storing, 144
 Fittonias, growing, 184
 Fleur de Lys, 469
 Floral conundrums, 261
 Flora of Vermont, 178; of Yorkshire, the Jura, 324; exterminating British, 499
 Florida, wild flowers of, 416
 Florists, two desirable plants for, 266
 Flowers—at Felixstowe, 37; wild, of old English gardens, 26, 107, 237, 342, 447; glass, 138; early hardy, 142; for the hospitals, 244; hardy spring, 256; with perfumes, 306; developing odour in, 328; Everlasting or Immortelle, 411; spring, 414; and plants at the Temple Show, 434; for city schools, 455; arranging, 480; notes on hardy, 472; wild, raid on, 499; tons of, 519; and bridesmaids, 521; florists', 542
 Flue dust, uses of, 43
 Flyless! Flealess! Frostless! 514
 Forced—Strawberries, 223, 260; Rhubarb, profit in, 257

Forest fire, Manx, 269
 Forest of Dean, 193
 Forestry the new, 212; for the Highlands, 261; notes, 285; literature, prizes for, 346; library, a remarkable, 454
 Forests, European, 328
 Fossil discovery, 244
 Fowl manure, 21
 Fowls, winter diet for, 294
 Foxglove, common, 458
 Fragrance, 234
 Francoa ramosa, 105
 Freemasonry, gardeners', 318
 Fritillaria, the, 264
 Frogmore, 90; Dutch garden, 90; the mausoleums, 91; ground plan, 100; tea rooms, 101
 Fruit—forcing, 19, 42, 63, 83, 103, 123, 143, 163, 183, 269, 291, 313, 335, 357, 379, 400, 424, 443, 465, 487, 509, 531, 548
 Fruit—hardy fruit garden, 41, 83, 123, 163, 291, 335, 379, 423, 465, 509, 547
 Fruit—in store, 8; cleansing trees, 41; trees in pots, 36; unprofitable fruit growing, 29; will fruit drying pay? 24; undersized, 45; late dessert 78, 135; dwarfing stocks, 167; mauuring, 170; pruning dwarf, 184; in Devonshire, 222; fatal bloom of the, 266; from Jamaica, 260; market in cold Siberia, 266; and vegetables, cold storage for, 285; and bees, 301; regrafting fruit trees, 321, 346; prospects, 346, 430; culture, common mistakes in, 385, 410, 443; shelves, wood for, 444; and vegetables at the Temple Show, 438; watering and mulching fruit trees, 449; growing for exhibition, 478; prospects in Erin, 477; prospects in Kent, 476; prospects at Barford Hill, 477; season, 470; preservation of, 511; prospects around Cardiff, 498; a tax on, 498; spraying of fruit trees, 520; preserving, 521; Clydesdale, 532; Kent crop, 520; prospects around Bedford, 536
 Fuchsia—the, 264, 495; corymbiflora, 402
 Fumes from stages, 20

Gadding and gathering, 321, 352, 374, 418, 461, 504, 526
 Garden, a novelty, 244; Hall or, 339; a cobbler's, 402
 "Gardeners' Assistant," the, 3, 260
 Gardeners' Benevolent Institution, annual meeting of, 80; annual dinner, 452
 Gardeners—book, 33, 73, 115; education of, 73; scarcity of journeymen, 261, 307, 329, 351, 373, 417, 495; ladies as jobbing, 324; pay, young, 395, 417, 481, 503, 525; as committeemen, exhibitors, &c., 525, 541; honouring a Scottish, 520
 Gardeners' Charity Guild, 391
 Gardeners' (Royal) Orphan Fund—annual meeting, 160; annual dinner, 397
 Gardening—books, 8; Scottish, 273; experimental in Worcestershire, 300; at school, 301; market, book on, 337; Good Friday and, 324; high class, 427; school, a practical, 461; school, 470
 Garden plants, a practical guide to, 181
 Gardens—hanging, 257; instruction, 279; some peeps in rock, 322; at railway stations, 413
 Genista flowers dropping, 85
 Gentiana acaulis in pans, 394
 Geometry, book on, 510
 Gerbera Jamesoni, 416, 444
 Germination of seeds, times for, 14, 37
 Gesnera cinnabarina, 20
 Gladiolus, the, 264, 317

Glasgow Botanical Garden, 193
 Gloriosa superba, 46
 Gloxinia, the, 264
 Gloxiulas for exhibition, 84; Webbs', 523
 Gooseberry moth, 510
 Gooseberries—the, 33, 458; and Currants, preserving buds, 105
 Gordon, Mrs. G., death of, 53
 Grafting—up to date, 9, 391; impostors', 49; notes on, 298; wedge, 337
 Grapes—late, 11; the hygiene of, 14; Black Morocco and others, 33; foreign, in America, 37; late, Mr. Ross' at Bristol, 27; again, 181; some that are fickle, 188; Gros Colman, 240; Madresfield Court, 239, 307; Gros Maroc, 395, 417, 459, 481; spotted, 466; spot on, 511, 549
 Grassendale Show, 259
 Grass land, ridding of coarse grass, 292
 Grasses for seacoast, 105
 Grevilleas, the, 411, 496
 Growing for market, 65
 Grumble, an appreciative, 11
 Gymnogramma schizophylla, 466

Hæmantbus, the, 330
 Hall? garden or, 339; for horticulture, a, 417
 Hanging gardens, 257
 Hardy flowers of spring, 256
 Harvest weather forecasts, 455
 Hawks for frightening birds, 359
 Haystack, how to weigh a, 446
 Heating—lean-to plant house, 336; power of saddle boiler, 336; a problem in, solved, 378, 417, 459, 481, 503; and ventilating hothouses, 462
 Hedge cutting in Suffolk, 347
 Hedges, English, 502
 Helcia sanguinolenta, 385
 Helianthus, the, 330
 Heliotropiums, 460
 Hellebores, the, 330
 Hidalgo Wercklei, 302
 Highbury, notes from, 348
 Hippeastrums—the, 263, 314, 330; at Kew, 300; at Chelsea, 321; Loris, 440; Captain Holford's, 456
 Hitcham Grange, 478
 Holland House, 213
 Hollies, leaf shedding, 64
 Horseradish, 400
 Horticultural—catalogues, 74; societies, 244; education in Australia, 467; Hall, Boston's new, 521; examination (Royal Horticultural Society), 546
 Horticulture, a hall for, 373
 Hotbed, material from, 184
 Humus, 159
 Hyacinth, the, 460
 Hyacinths—casting flower spike, 292; propagating from bulbs, 416
 Hyde Park, butterflies for, 261
 Hydrangea, 460
 Hymenophyllum tunbridgense, 296

Iberis, 460
 Imantophyllum miniatum, 59
 Impatiens, 460
 Incarvillea, the, 518
 Indian Fig, the, 179
 Insect enemies of trees, 306
 Insects—in soil, destroying, 12; injurious, 388
 Insectivorous plants at the Temple Show, 433
 Instruction gardens, 279
 Ipomæa, 518
 Iris Bakeriana, 142; the, 518

Irises—dwarf, 480; types of German, 470
 Irish—notes, 170; Tobacco culture, 300
 Irish seed-testing station, 223
 Ivy, English, for shady places, 178; tree, 266
 Ixiolirion montanum, 532
 Ixora culture, 159; Regina, 159; the, 518

Jacobinias—chrysostephana, 37; magnifica, 138
 Javanese Rhododendrons, 220
 Journeymen gardeners, scarcity of, 261, 307, 329, 351, 373, 417, 491

Kerria japonica, 328
 Kew—early spring at, 99; bulletin, 324; the presentment of, 346; Orchids, 385; the King at, 413; best time to visit, 549
 King, Sir George, V.M.H., 243, 391
 Kitchen garden, the, 64, 104, 144, 183, 279, 313, 358, 401, 446, 488, 531
 Kniphofias (Tritomas), 518
 Krelage, Mr. J. H., 9

Labiates, the, 524
 Lachenalias, 518
 Lælias—anceps alba, 189; Jongheana, 255; Jongheana Kromeri, 319; lobata, 363; purpurata, 515
 Lælio-Cattleyas—warnhamiensis, 210; Edgar Wigan, 439; Invernio, 440
 Laing's of Forest Hill, 461
 Land, the, and its culture, 405, 460
 Lapagerias, 4
 Lasiandra macrantha, 219
 Latania rotundifolia, a variegated, 95
 Late dessert fruits, 209
 Lawns, manures for, 165
 Lettuces, early, 21
 Leucocrinum montanum, 440
 Library, Mr. Philip Crowley's, sale of, 324
 Lilacs—treatment after flowering, 315; after forcing, treatment of, 359
 Lilies, seedling, growing underground, 421
 Lilium candidum diseased, 467
 Liliums—canadense, 131; Henryi, 131; exportations from Japan, 138; notes on, 130, 155, 304; Humboldti, 176; show and conference, 487
 Lily pond, the, in Greenwich Park, 196
 Linaria, 458
 Linnæa borealis, 524
 Lithospermum canescens, 440
 Liverpool Spring Show, 289
 Lobelias, dwarf, 65
 London parks, Sunday in the, 244
 Longford Castle, notes from, 302
 Luculia gratissima, 34
 Lycastes—costata, 5; notes on Skinneri, 5

Magnolias—spring flowering, 116; conspicua, 117
 Malmaison culture, points in, 364
 Man and plant, 295

Mauures—fowl, 21; old hotbed, 55, 73; and leguminous plants, 73, 135, 195; for fruit trees, 170, 303; stable v. artificial, 286; phosphatic, the use of, 306
 Manuring of fruit trees, the, 303, 388, 484
 Manx forest fire, 269
 Marguerite Carnations, 198
 Market, growing for, 65
 May-month and sunshine in London, 393
 Mealy bug, destroying, 42
 Melons—forcing, 20; culture of, 38, 62, 111, 150; leaves, 549; seasonable notes, 123, 183, 496; Excelsior, 486; flowers of, not opening, 510; early summer, 515
 Meteorological posts, 244
 Mezereon, the, 138
 Michaelmas Daisies, 387
 Microlepis hirta cristata, 65
 Mignonette in pots, 124
 Miltonia Warscewiczii, 450
 Montbretias, 384
 Moorea irrorata, 275
 Moor Hall, 96
 Moss, uses of in Southern United States, 266
 Mostly Irish, 170
 Moths as food, 455
 Moth, the great, of 1900, 190, 239
 Muscari conicum Heavenly Blue, 394
 Mushroom beds and horse manure, 315

Narcissi—incomparabilis Sir Watkin, 267; Robert Berkeley, 458; Conference at Dundee, 413; in bowls, 439; incomparabilis Lucifer, 480
 Nasturtiums, 458
 Nature, preservation of, 541
 New Year's address, 1
 Nomenclature, a standard, 244
 Norman, Mr. Geo., V.M.H., 247
 Notcutt, marriage of Mr. R. C., 520
 Notes and comments, 130

Oaks, Evergreen, proper season for cutting down, 510
 Obiter dicta, 309
 Obituary—Mrs. John Easter, 243; Mr. John Galvin, 245; Sir E. Saunders, 262; M. Maxime Cornu, 317; Mrs. J. G. Baker, 374; Mr. David Taylor Fish, 374; Mr. John Thomson, 374, 397; Mr. M. Davis, 397; Mr. Frank Orchard, 454; Mr. W. Fancourt, 505; Lord Wantage, V.C., 505; Mr. Thomas Softly Ware, 505
 Observations, phenological, 271
 Odontoglossums—Adrianæ Mrs. Robert Benson, 210; Kramerii album, 169; Loochristiense Rochfordianum, 149; maculatum, 210; nevadense rosefieldiense, 109; crispum Queen Empress, 235; Edwardi, 236; crispum purpurascens, 275; nævium majus, 275; pardinum, 409; Adrianæ Lindenæ, 439; crispum Annie, 439; c. Capt. Hocken, 439; c. Abner Hassall, 439; Wilkeanum Golden Queen, 439; Rossi majus, 473; crispum punctatum Rosslyn var., 486; loochristiense Lord Milner, 486; x Wilkeanum Golden Queen, 493; crispum "Annie," 515
 Odontoglossums, overpotting, 89
 Old gardens and new gardeners, 67

Olives and insect pests, 516
 Olive tree, the, 502
 Oucidiiums—pectorale, 5; phymatochilum, 84; Brunleesianum, 493
 Onions, transplanting, 77
 Orchards, British, 260
 Orchids—Cattleya Dowiana Rosita, 5; Lycaste costata, 5; notes on Lycastes, 5; Cattleya Prince of Wales, 25; a white Vanda cœrulea, 25; West's extract of nicotine for, 25; starting Calanthes, 47; Cypripedium insigne, 47; C. Leeannum, 47; Dendrobium Schueiderianum, 47; D. thyrsoflorum, 47; Phaius grandifolius, 47; leaves spotted, 84; of small stature, 89; Cypripedium Gertrude Hollington, 89; Phalenopsis, 89; Zygopetalum leucochilum, 89; Z. maxillare, 89; Disas, 109; Epidendrum atro-purpureum, 109; Vandas, 109; Calanthe gigas, 129; Dendrobium rubens, 129; Phalenopsis Schilleriana alba, 129; Cœlogyne cristata, 149; Stanhopea grandiflora, 149; Brassia verrucosa, 184; Cypripedium T. W. Bond, Coundon Court variety, 169; Phaius tuberculosis, 169; seasonable notes, 169; potting, 297; cool house, 235; Odontoglossum crispum Queen Empress, 235; O. Edwardi, 236; Cœlogyne pandurata, 235; Angreacum eburneum, 235; Phalenopsis Harriettæ, 236; Chysis Chelsoni, 255; Cypripedium Lord Derby, Sanders' var., 255; Lælia Jongheana, 255; Odontoglossum crispum purpurascens, 275; O. nævium majus, 275; Moorea irrorata, 275; Cœlogyne pandurata, 275; Epidendrum Wallisi, 275; Dendrobium lituiflorum, 275; Cypripedium Mastersianum, 297; Vanda cœrulescens, 297; Angreacum fastuosum, 297; Dendrobium Boxalli, 319; Dendrobium splendidissimum, 319; Lælia Jongheana Kromeri, 319; Cypripedium insigne, 319; for cutting, 341; Dendrobium Brymerianum, 341; Epidendrum x Clarissa superba, 341; Lælia lobata, 363; Odontoglossum x Adrianæ Crawshayanum, 363; at Highbury, 372; Cœlogyne cristata at Garthyngared, 335; Helcia sanguinolenta, 385; Kew Orchids, 385; Odontoglossum pardinum, 409; Cypripedium Mendeli Queen Alexandra, 409; Dendrobium pulchellum, 409; at the Temple Show, 439; Cattleya Mendeli gigantea, 439; Cattleya Mendeli Mrs. Robert Tunstill, 439; Lælio-Cattleya Edgar Wigan, 439; L.-C. Invernio, 439; Odontoglossum crispum Capt. Hocken, 439; O. c. Annie, 439; O. Adrianæ Lindenæ, 439; O. Wilkeanum Golden Queen, 439; O. crispum Abner Hassall, 439; at Barford Hill, 451; Orchid Guide, Sander's, 451; Aërides Houlettianum, 450; Dendrobium Fytchianum, 450; D. Victoria Regina, 450; Sobralia macrantha alba, 450; Miltonia Warscewiczii, 450; Odontoglossum Rossi, 473; Cattleya intermedia alba, 473; Phalenopsis Lowi, 473; Cypripedium Pearcei, 473; Odontoglossum x Wilkeanum Golden Queen, 493; Oncidium Brunleesianum, 493; for importation, 510; from Shipley Hall, 493; night temperatures for, 493; at Clare Lawn, East Sheen, 504; Thunia Bensoniæ, 493; Odontoglossum crispum "Annie," 515; Lælia purpurata, 515; the Right Hon. Jos. Chamberlain and his, 515; Phalenopsis, hybrid, 520; Phalenopsis violacea, 537; Cattleya Acklandiæ, 537

Ormerod, Miss E. A., V.M.H., 243, 257
 Otto of Roses, 223
 Oxalis cernua, culture of, 326
 Oxera pulchella, 38, 336

Pæonia Christine Kelway, 440
 Pæonies, 519
 Paint—for greenhouses and vineries, 124; for hot-water pipes, 144
 Palms—variegated, 14, 95; culture in Belgium, 77; for rooms, 176;
 Pancratium fragrans, 110
 Paudanus Veitchi, 125
 Pansies, treatment of, 92
 Paris green, 403
 Paris horticultural show, 476
 Parks—public, service in, 14; Sunday in the London, 244; Glasgow, 324; Obelisk, Dublin, 368; Edinburgh, 368
 Passiflora edulis, 164
 Passing of a great age, the, 67
 Pasture, poor grass in, 549
 Peach Duchess of York, 440
 Peaches and Nectarines, 42, 83, 123 163; shoots browned, 125; planting, 149; leaves falling off, 293; trees, profitable longevity of, 380; unsatisfactory, 456
 Pears—Doyenné du Comice, 33; scale on, 43; Joséphine de Malines, 82; season, the, 97; elusive, the, 115; Huyshe's Prince Consort, 145; pruning, 137; twigs enlarged and infested with scale, 164; Olivier de Serres, 170; Bergamotte Espereu, 323, 352, 373, 395, 460; Easter Beurré, 417; dropping off, 532
 Peas—in pots, 20; notes on, 30; culture of, 116; sowing out of doors, 145; soaking in petroleum, 336
 Peat, the wonders of, 77
 Pelargoniums—Zonal, 21; Ardens, 323; Ivy-leaved, diseased, 444; Ivy-leaf Mrs. W. H. Martin, 433; Ivy-leaf Leopard, 486; Ivy-leaved, 502
 Pennsylvania Horticultural, 245
 Pentstemons, choice, 123
 Pergolas, 240
 Persimmon, the, 155, 203
 Pest, a persistent garden, 322
 Petroleum, soaking Peas in, 336
 Petunias in pots, 105
 Phæo-Calauthe Schroëderiana, 139
 Phaius—grandifolius, 47, 89; tuberculosis, 169;
 Phalenopsis, 89; Schilleriana, 450; S. alba, 129; Harriettæ, 236; hybrid, 520; violacea, 537
 Pharmaceutical Society versus White, 175
 Phenological observations, 477
 Phenyle, Little's, soluble, 358
 Phitesia buxifolia, 299
 Phosphates, the supply of, 306
 Phyllocacti, exhibition, 429
 Phytopathology, 390
 Pines, notes on, 14, 77, 133, 285, 323, 494
 Pine woods, a Minister's, 261; log, a huge, 372
 Planes, 156
 Plant—elements, 34; and man, 295; exhibitor in good form, a, 498; novelty, American, 521
 Planting—spring, 163; park and avenue trees, 186
 Plants for covering faggots at seaside, 104; for Carnation house in summer, 124; poison, 300; greenhouse hardwooded, 340, 403, 410; and flowers at the Temple Show, 434; hardy, 480; a beautiful pot, 430; British, destruction of, 521
 Platyclinis glumacea, 210
 Pleasures of life, 328
 Plums—President, 136; stocks for, 165
 Poison Ivy, virulence of, 306
 Poisons, a corner in, 205
 Poplar wood, 84
 Potatoes—a rival of the, 14; tuberation of, 178; early, 242, 313, 417; earthy, 258; testing varieties, 258; field culture of, 316; vagaries, 351; Up-to-Date, 481, 525
 Pots, plunging, 84
 Primroses, green, 359; old double, 394

Primulas--and Cyclamens at Reading, 100; from Chelsea, 223; unsatisfactory, 222; Star, 302
Proposed National Sweet Pea Society, 243
Prunes *versus* oatmeal, 416
Pruning—winter, 112; bush fruits, 163; of hardy trees and shrubs, 213, 276
Pyrethrums from Langport, 499

Plants, Flowers, Fruits, and Vegetables Certificated by the Royal Horticultural Society.

Adonis amurensis, 180
Androsace chumbiense, 440
Apples—Diamond Jubilee, 181; Lamb Abbey Pearmain, 227; Scarlet Nonpareil, 180
Asplenium trichomanes bipinnatum, 528
Auricula Leonora, 399

Begonia—Mrs. W. G. Valentine, 440; Queen Alexandra, 440
Borecole albino, 399
Brasso-Cattleya nivalis, 399

Calanthe Oakwood Ruby, 102
Caunas—Elizabeth Hoss, 486; Grasseherzog Ernst Ludwig von Hessen, 486; Jean Tissot, 486; Oscar Dannecker, 486

Carnations—Duchess of Roxburgh, 528; May, 375; (tree) Sir H. MacDonald, 440

Cattleyas—chocoensis alba, 102; Mendeli gigantea, 439; Mendeli Mrs. Robt. Tunstill, 439; Mendeli Queen Alexandra, 399; x Miss Harris var. Edith Ashworth, 311; Mossiae Mrs. F. W. Ashton, 486; Schrödera heatonense, 399

Cyclamen libanoticum, 58
Cypripediums—Ernesti, 227; Lord Derby, Sander's var., 227; T. W. Boud, Coundon Court variety, 132

Cucumber Famous, 440

Dendrobiums—Ainsworthae Edithae superba, 227; Ashworthae, 58; Euryalus var., 181; Rocklingianum, 227; Wiganianum, 132
Dictamnus caucasicus, 528

Epidendrum x Clarissa superbum, 311

Gloriosa lntea, 528

Hæmanthus — mirabilis, 268; Queen Alexandra, 268

Hippeastrums—(Amaryllis) Avernicus, 311; (Amaryllis) Clovelly, 268; (Amaryllis) Lord Boringdon, 268; Loris, 440; (Amaryllis) Marathon, 311; (Amaryllis) Rialto, 311

Irises—tubergeniana, 181; Willmottiana, 375

Lachenalias—Kathleen Paul, 268; Phyllis Paul, 268

Lælias—anceps Simondsi, 58; Jongheana alba Ashworthae, 311; Jongheana Kromeri, 268

PLANTS, &C., CERTIFICATED—continued.

Lælio-Cattleyas—Cybele, 375; Digbyana Mendeli, Tring Park variety, 399; Edgar Wigan, 439; Ivernio, 440; Mrs. Gratrix, Tring Park var., 399; vacuna, 227; warnhamiensis, 181
Leucocrinum montanum, 440
Lithospermum canescens, 440
Lycaste lasioglossa, 58

Masdevallia Alceste, 311

Melon Excelsior, 486

Miltonia vexillaria gigantea, Rosslyn var., 311

Narcissi—Aftermath, 399; Allen's Beauty, 311; Amber, 399; Croydon, 399; D. E. Wemyss, 399; Dog Star, 399; Elaine, 399; Early Grey, 375; Herrick, 375; Rear Guard, 399; Robert Berkeley, 375; Sea Bird, 399; Spenser, 399; St. Cecilia, 375

Odontoglossums—x Adrianæ Cobbianum, 399; x Adrianæ Crawshayanum, 375; x Adrianæ Lindenia, 439; x Adrianæ Mrs. Robert Benson, 181; x Adrianæ Mrs. Simonds, 311; coradenei Mrs. de Barri Crawshay, 181; crispum "Annie," 439; crispum Abner Hassall, 439; crispum Captain Hocken, 439; crispum "Confetti," 399; Countess of Derby, 399; crispum Edward VII., 375; crispum punctatum, Rosslyn var., 486; crispum purpurascens, 268; crispum "Queen Empress," 227; Raymond Crawshay, 399; Dennisoniae nebula, 311; x Domino, 399; x Fairy Queen, 58; Halli Edward VII., 399; Loochristiense coundoniense, 132; Loochristiense Lord Milner, 486; Loochristiense Rochfordianum, 132; luteo-purpureum, Burford var., 375; nevadense rosefieldiense, 102; triumphans Mrs. de Barri Crawshay, 311; Ruckerianum var., 311; x Wilckeanum Golden Queen, 439; x Wilckianum Turnford Hall var., 375
Oncidium Marshallianum sulphureum, 375

Pæonia Christine Kelway, 440

Peach Duchess of York, 440

Pear Josephine de Malines, 58

Pelargoniums (Ivy-leaf)—Leopard, 486; Mrs. W. H. Martin, 486

Phaio-Calanthe Schröderiana, 181

Pink (Mule) Lady Dixon, 399

Primulas—floribunda grandiflora isabellina, 58; megasafolia, 268; obconica, Kenmore strain, 375; Sultan, 399; viscosa Mrs. J. H. Wilson, 375

Pteris cretica albo-lineata Alexandræ, 132

Rhododendrons—grande, 268; King Edward VII., 102

Roses—Lady Roberts, 528; (Polyantha) Leuchtstern, 440; (Hybrid) Soleil d'Or, 440

Sedum Kamschaticum fol. var., 528

Sobralia Ruckeri, 399

Sophro-Cattleya George Hardy, Tyntesfield var., 528

Sophrontis Rossiteriana, 181

Strawberry The Laxton, 528

Swainsonia McCullochiana, 440

PLANTS, &C., CERTIFICATED—continued.

Tulipas—Annie McGregor, 440; "Brunhilde," 399; Dr. Hardy, 440; Gesneriana Ixioides, 440; Korolkowi bicolor, 268; Mooreana, 440; pulchella, 311; Van Poortvliet, 440; William III., 399

Quassine, 458

Queen Victoria, floral tributes to, 243

Quiuce jelly, 524

Rabbits in the pleasure grounds, 135

Radishes, early, 49

Rain gatherers, 178

Raspberries, pruning, 165

Refuse, garden, 84

Rhododendrons—in pots, 223; Japanese, 220; greenhouse, 372, 386; varieties of, 524, 526

Rhubarb, forcing, 16; profit in forced, 257

Richmond Park, 245

Rivinas, 59

Rock gardens, peeps in some, 322

Rondeletias, culture of, 124

Root—pressure, 429; pruning, 481

Roses—climbing, 192; pruning newly planted, 220; bedding, 220; mildew on, 20; planting, 6; climbing in pots, 34; three good, 34; origin of Moss, 76; otto of, 223; salt for, 124; "The Rosarian's Year Book," 120; late pruning of, 313; in spring, planting, 343; mildew on, under glass, 343, 474; trained, in France, 343; Lady Battersea, 429; at the Temple Show, 432; polyantha Leuchtstern, 440; Soleil d'Or, 440; Liberty, 452; Mrs. B. R. Cant, 452; H.T. Roses, 452; "How to Grow," 454; ornamental species of, 474; freak, 477; Carmine Pillar, 494; Papa Gontier, 502; fungus on, 510; on pathways, 494; select species of, 494; "Dawson," 518; Golden Gate, 518; Souvenir de Mme Verdier, 517; Sweet Brier, 517; mildew on 517; seasonable notes on, 517; synonymous varieties of, 517; climbing, 538; in the open air, 538; in pots, 538
Rotation in cropping, 158
Rubus ulmifolius variegatus, 502
Rudbeckia - californica, 280; hirta, 343
Runners, Scarlet, systems of growing, 525

Rubus ulmifolius variegatus, 502

Rudbeckia - californica, 280; hirta, 343

Runners, Scarlet, systems of growing, 525

Saint Patrick's Day and Shamrock, 243

Salt, a pinch of, 549

Sawbridgeworth revisited, 136

Scent, 261

Schedule blunder, a, 366, 418, 481, 503, 525

Schedule, Shrewsbury, 541

Scientists, meeting of, 325

Seakale, forcing, 16; blanching, 164; Lilywhite, 219, 258

Seasonable work in plant houses, 110, 152, 199

Sedum, derivations of name, 158

Seeds—germination of, 14, 245; the supply, 37; irregular growth of, 178; price of, 231; Irish testing station, 223; electrifying, 429

Senecio Petasites, 122

Sequoias, giant, the preservation of, 68
Shading, 347

Shrubs and trees—early flowering, 56; the pruning of hardy, 218, 326, 370; at the Temple Show, 433; flowering, 480

Sidalcea candida, 425

Size, the worship of, 187

Smith, Dr. W. G., 243

Sobralia macrautha alba, 450

Societies—Bath and West and Southern Counties, 463; Beckenham Horticultural, 249, 261; Berkshire, Reading and District Auxiliary of the Gardeners' Royal Benevolent Institution, 201; Birmingham Gardeners' Association, 312, 440; Brighton and Sussex Horticultural, 194, 356, 440; Bristol and District Gardeners' Mutual, 194, 249, 288; Bristol Naturalists', 422; Broughty Ferry Horticultural, 261; Butley Tulip Show, 507; Caledonian Horticultural, 284, 310; Cambridge Horticultural, 530; Canterbury Gardeners', 530; Carnation (Southern Counties), 279, (Midland), 312; Chester Paxton, 378; Chrysanthemum (National), 333; Croydon and District Horticultural, 261, 312, 348, 487; Devon and Exeter Gardeners' Association, 283, 312; East Anglian Horticultural, 422; Edinburgh Market Gardeners' Association, 312; Evesham Show, 507; Gardeners' Benevolent Institution, 262; Hesse Gardeners' Mutual, 201; Ipswich Daffodil Show, 334; Kildare (North) Horticultural, 422; Leeds Paxton, 400; Liverpool Horticultural Association, 201; Manchester Spring Show, 357; Midland Daffodil, 376; National Amateur Gardeners' Association, 249, 312, 530; National Auricula and Primula, 356; ditto (Midland section), 377; National Rose, 192, 194, 513, 541; Norwich and Norfolk Horticultural, 377; Notts Horticultural and Botanical, 508; Reading and District Gardeners' Mutual, 194, 249, 238, 378; Royal Botanic, 369; Royal Gardeners' Orphan Fund, annual dinner, 397; Royal Horticultural: Committees, 225, 267, 310, 355, 398, 485, 527; (Scientific), 283, 332, 375, 420, 507, 542; the new gardens, 332; verdict against Farnham site, 353; general meeting, 353; the Temple Show, 431; Lily show and conference, 487; Royal Horticultural of Ireland, the etiquette of awarding prize money, 290, 307, 329, 334, 351, 373, 395, 459, 503; Royal Institution, 530; Royal Meteorological, 193, 263, 348, 399, 463, 508; Royal National Tulip (Southern section), 464; ditto (Northern section), 506; Royal Scottish Arboricultural, 193, 400; Royal Scottish Geographical, 312; Scottish Horticultural Association, 288, 311, 399, 487; Sheffield Chrysanthemum, 422; Shirley Gardeners' and Amateurs', 463, 464; Shropshire Horticultural Society, 238, 333; Sweet Pea (National), 260, 301; United Horticultural Benevolent and Provident Society, annual general meeting, 227, 508; Wakefield Paxton, 333, 508; Wokingham Horticultural, 279; York Gala, 529; Richmond Horticultural, 543; Royal Oxford Horticultural, 544

Soil—and manure, 23; mellow, 158

Solanum venustum, 518

Solanums, 480

Soot, the value of, 99

Sophrontis Rossiteriana, 210

Spade *versus* fork, 11

Spades, 363

Spiraea astilboides, 59

Sprayer, a handy, 521

Sprekelia formosissima, 148

Spring, hardy flowers of, 256

Springtide, 344

Stable manures, 258; *versus* artificial, 286, 307

- Stanhopea grandiflora*, 149
 Stanton, Mr. G., honours for, 152
 Stocks—dwarfing, 167; for budding, 184
 Strawberry—points of a good, 198; culture, improved, 223; support, a, 239; runners for forcing, 380; leaves and flowers injured, 466; early, 458; crop, the forced, 484; the Laxton, 542
 Strawberries—black dots on leaves, 43; in pots, 63, 133, 178; perpetual, 55; treatment of, 145; in barrels, 429
 Succulents for bedding, 326
 Sugar Beet, 252
 Sulphate of copper for the Greek vineyards, 9; of ammonia and nitrate of soda, 424
 Summer, early, in Warwickshire, 546
 Sundries, 3
 Sunny memories of Sutherland, 218
 Sun shines, when the, 276
 Sutton's nurseries, 100, 504
 Swainsonia McCullockiana, 440
 Swanley—Horticultural College, 325, 418, 430; Cannell's Nursery at, 352
 Sweet, Mr. James, V.M.H. 259
 Sweet Pea, proposed National Society, 245
 Sweet Peas, 36, 60; in pots, 500; autumn sown, 541
 Symons, memorial to the late Mr. J. G., 521
 Tea, culture of, 260
 Tecoma Smithi, 370
 Temperate house, Kew, octagons of the, 347
 Temple Show, 431
 Theft, a mean, 243
 The old century—the new, 12
 Thomas, retirement of Mr. Owen, 397
 Thunia Bensoniæ, 493
 Thysacanthus rutilans, 298
 Tigridias, planting, 124
 Thunbergia laurifolia, 309
 Todeas, 296
 Tomatoes—early, 75; Hackwood Park Prolific, 75; should they be stopped? 155; immature, 175; culture of, 225; jottings about, 308; plants diseased, 483, 510
 Tomato growing, book on, 301
 Topiary work at Elvaston, 12, 33
 Trachelium ceruleum, 84
 Trees—expansion of, 14; annual lopping, 59; at Osborne, 133; an hotel of, 138; in the London Parks, 178; ages of, 223; the pruning of hardy, 218, 326, 370; Loquat, 223; in the Strand, 245; who owns roadside? 260; insect enemies of, 306; purple leaved, lack of colour in, 416; and shrubs at the Temple Show, 433; Californian, the, 502; Japanese dwarf, 493; endurance of Californian, 521; developing the shape of, 524
 Trichocentrum tigrinum, 297
 Tropæolum Sunlight, 416
 Tuberoses, treatment of, 124
 Tulipa Picotee, 429; Gesneriana Ixioides, 440; Mooreana, 440; Batalini Sunrise, 440; La Tulip Noire, 440; "Brunhilde," 502
 Tulips, 418; at Cork, 497; disease in, 527
 Utility in gardening, 99
 Vanda cærulescens, 297
 Vandas—a white cærulea, 25; notes on, 109
 Vanilla, 195
 Vegetables—English, in East Africa, 7, 155; forcing, 16; artificial light in, 14; early, in frames, 64; early, raising in boxes, 104; new, 300; collection of, 336
 Veitch, Mrs. Peter, death of, 153
 Veltha for rust, 52, 104
 Victoria Medal of Honour in horticulture, 243, 476
 Village life, back to, 520
 Vines—seasonable notes on, 19, 63, 103, 143, 183; not fruiting, 43; outdoor, 105; new borders for 152; notes on young, 259; leaves affected with spots, 315; leaves destroyed, 293; for planting and forcing, 298, 331; watering borders, 327; weevil, 334; Mrs. Pearson Vine dropping flowers, 337; rejuvenating old, 350; "weeping," leaf burning, 380; on the Continent, 502; syringing, 511
 Viola cornuta papilio, 429
 Violets—and Anemones, 37; and Violet culture, 331
 Virulence of Poison Ivy, 306
 Wages, gardeners', 314
 Walks, salting, 380
 Walls in the West Countree, 475
 Wasted vigour, 535
 Water gardens and gardening, 442
 Water—"Kent," unsuitable for plants, 421
 Water Lily pond, a, 49; ground plan, 51; sections of, 50; selections of plants, 50
 Water Lilies, uncommon, 524
 Waterpool, an indoor, 394
 Watsonia iridifolia Ardernei, 37
 Weather in 1900, 127; and the crops, 260
 Weeds in soil, destroying, 14
 Weevil, Vine, 337
 When the sun shines, 276
 Wild flowers of old English gardens, 26, 107, 237
 Wilton, impressions of, 441
 Windsor Elms doomed, 207
 Windflowers, single, 345
 Winter Aconites, 17
 Winter digging, 52
 Wireworm, successful trapping of, 175
 Women as gardeners, 11, 55, 95, 155, 195
 Wood leopard moth, 193
 Woods—the structure of, 23; ashes of and rubbish, 84; hard, of Paraguay, 158
 Worthing as a fruit centre, 499
 Wreath, an Ivy, 502
 Wreaths cast on the ocean waves, 520
 Yew, the, 12; at Elvaston, 15; tree, famous, on fire, 290; the Fortingall, Perthshire, 472
 Yucca—recurvifolia, 246; filamentosa, plants decayed, 425
 Zygopetalum leucochilum, 89; maxillare, 89



ILLUSTRATIONS.

	PAGE		PAGE		PAGE
Aconites, Winter	17	Gloxinias, Webbs'	523	Pergola, view of a	240
Agave attenuata, in Missouri Botanical Gardens	392	Grafting, wedge	337	Phaio-Calanthe Schröderiana	189
Alocasia odora, in Missouri Botanical Gardens	393	Grapes, late, at Bristol, Mr. Ross'	27	Phalaenopsis Harriettæ	237
Anemones	345	Greenwich Park ("The Wilderness,") picture- esque scene in	196	" Mrs. J. H. Veitch	227
Angræcum fastuosum	297	Grevillea Thelemanniana	497	" Schilleriana	451
Aocus villosa	163	Gymnogramma schizophylla	466	" violacea	537
Apple Borsdörfer	20			Philesia buxifolia	299
" Claygate Pearmain	122			Phyllocacti, Messrs. Veitch's group at the Temple Show	433
" Diamond Jubilee	199	Heating, plan of flow and return pipes	378	Plant corridor in Mr. Chamberlain's garden	349
" Emperor Alexander	137	Hidalgoa Wercklei	303	" houses, Royal Botanical Gardens, Edin- burgh	283
" Lamb Abbey Pearmain	248	Hippeastrums, a group of Capt. Holford's	457	Plants, hardy foliage and flowering, encircling water	365
" Lane's Prince Albert	265	" striped and netted	263	Plum President	136
Apples, brown rot fungus on	483	Hitcham Grange	479	Portraits—Davis, the late Mr. M.	397
" part of Messrs. Bunyard's collection of at Temple Show	441	Holland House, the Dutch garden	214	" Fish, the late Mr. D. T.	375
Aquatic plants, a tank with	323	" the east front	213	" Mackellar, Mr. A.	396
Auriculas—Dean Hole	241	" fountain and west side	217	" Norman, Mr. George, V.M.H.	247
" Midnight	241	" the west front	215	" Ormerod, Miss Eleanor, L.L.D., V.M.H.	257
" Mrs. Henwood	241	Hyacinth casting its flower-spike	292	" Sweet, Mr. James, V.M.H.	259
				" Thomas, Mr. Owen, V.M.H.	396
Beetles, Rove	445	Iris Bakeriana	142	Protector novelty, a	227
Begonias, in baskets, tuberous rooted	79	Irises, types of German	471		
Blossom in spring	415	Ixiolirion montanum	532	Queen, the	69
Boiler, circular riveted steel	463	Ixora regina	159		
" terminal saddle	462			Rhododendron Cloth of Gold	221
" " " another pattern	462	Lælia Jongheana Kromeri	319	Rhododendrons, a varied group of hardy	456
Boilers, showing flow and return pipes	462	Lasiandra macrantha	219	Rock-bound pool with suitable hardy plants	365
Brayton Hall, Cumberland	522	Lilium canadense	131	Rockery with Geraniums and other plants	323
		" Henryi	131	Rocky stream and bridge, Ballimore, Argyll- shire	305
Calanthe gigas	129	" Humboldtii	177	Rose Grand Duc Adolphe de Luxembourg	35
Carpet bedding design	315	Lily pond in Greenwich Park	197	" H.T. Lady Battersea	436
Caterpillar, Gooseberry	510	Lockinge Park	501	" Victor Hugo	35
Cattleya Mendeli Queen Alexandra	409	Lycaste costata	5	" White Lady	35
" Prince of Wales	25			" pegged down	539
Chorizema cordatum splendens	488	Magnolia conspicua	117	Rudbeckia californica	281
Cineraria, a "Cactus"	411	Moorea irrorata	277		
" stellata, specimen	435	Moor Hall, Cookham	97	Solanum venustum	519
Clematises, trained, and pot Roses	500	" the stove	96	Strawberries in barrels	439
Cœlogyne cristata	151			Strawberry "The Laxton"	542
" " at Garthyngared	385	Narcissus cyclamineus	287	Succulent plants, a model bed of	327
" pandurata	275	" Corbularia monophylla	287		
College Gardens, St. John's, Oxford, view in the grounds	545	" incomparabilis Lucifer	482	Tecoma Smithi	371
Crocea saligna major	30	" " Sir Watkin	267	Tetradlea hirsuta	461
Currants, Red and White	61	" " Robert Berkeley	449	Tomato Hackwood Park	75
Cypripedium exul, Major Joicey's var.	311	Nectarine, Rivers' Cardinal	440	Topiary work at Elvaston Castle, near Derby	13
" Gertrude Hollington	89, 431			The Yew Garden	15
" insigne	47	Odontoglossum × Adrianæ Crawshayanum	363	Tulipa "Brunhilde"	505
" Lord Derby, Sanders' var.	255	" Adrianæ Mrs. Robert Benson	210	Tulips, Czar Nicholas and elegans alba	419
" T. W. Bond, Coundon Court var.	169	" crispum "Annie"	515		
		" " purpurascens	275	Vegetables in East Africa	7
Daffodil, parts of a	462	" " Queen Empress	235	Violets, new, sulphurea, Princess de Sumente	331
Darlingtonia californica	387	" Edwardi	236		
Dendrobium Brymerianum	343	" Loochristiense Rochfordianum	149	Water Lily pond, ground plan of and sur- roundings	51
" Wardianum	211	" nevadense Rosefieldiense	109	" " sections of portions	50
Diospyros Kaki, the Chinese Date Plum	191	" rossi var.	473	Water Lilies	57
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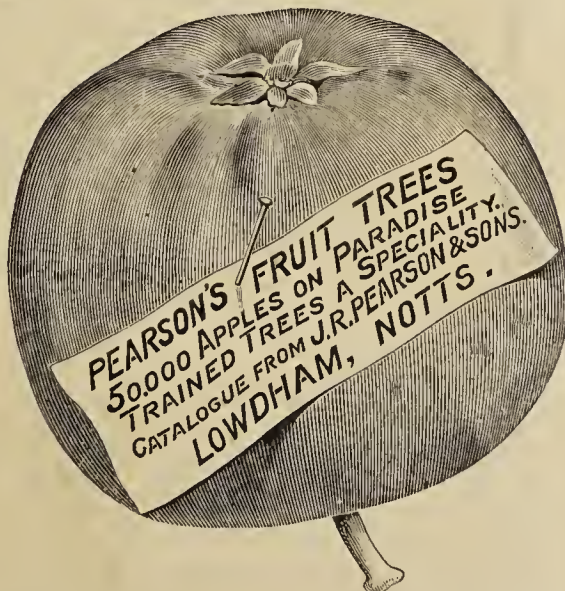
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Journal of Horticulture.

THURSDAY, JANUARY 3, 1901.

New Year's Address.

WHILE I have always esteemed it a privilege at the opening of the New Year to be able to address a few words of greeting to so wide a circle of horticulturists as the readers of our Journal, I feel it to be a special one to do so on the opening of another century. Ah! what a fertile theme the very mention of those words opens out to me, for surely the past century has been the most remarkable one in the way of progress we have ever had to recall. In all departments of human knowledge advancement has been exceptional. Think of what it has seen, and what great discoveries have been made. We had no railways, no steamships; the power of electricity, and the manner in which it could contribute to the comforts of life, were unknown. The speculations of Sir E. Lytton Bulwer's "Coming Race" do not, therefore, seem at all so improbable as we used to think them. And all this energy has had its effect on the special subjects which are connected with horticulture. The whole world has been over-run to provide plants for the adornment of our gardens and greenhouses; the forests of the New World have been ransacked to satisfy the demands of our Orchid cultivators, while China and Japan have yielded up their treasures also. The latter especially has proved to be a very gold mine, and its bulbs are so well adapted for culture in our temperate climate that they are to be met with in the gardens of the wealthiest, as well as those of the poorest of our land. The swamps and prairies of North America have also furnished us with many a treasure, and that paradise of bulbs, South Africa, has given us many beautiful plants to love and cultivate.

But I feel the subject is too wide for me to give more than a passing glance; I must clip my wings and come down to the more limited survey of the past year. That hardy perennial, Chiswick, and the removal of the Royal Horticultural Society from it,

During FIFTY-TWO YEARS the "JOURNAL OF HORTICULTURE" has been written by Gardeners for Gardeners, and in its principles, its practice, and its price it still remains the same. One alteration is perhaps, however, necessary. Our modern methods of production have rendered the price old-fashioned, and hence in order to meet the wishes of the present generation of Gardeners the "JOURNAL OF HORTICULTURE" will hereafter be sold for TWOPENCE instead of Threepence.

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has very vigorously pushed forward its shoots, and the controversy concerning it has been carried on with some warmth, and has elicited much difference of opinion. There are some to whom Chiswick is a very fetish, and the removal of the society from its sacred precincts seems to betoken the beginning of the end. Now into this controversy I have no wish to intrude. No one would, I think, wish to hamper the council in the praiseworthy efforts they are using to make the Royal the true exponent of all that is best and brightest in British horticulture.

Immediately connected with this is another matter which seems no nearer solution than it used to be, the providing for it a home in London, a place where the grand collections which are exhibited at its fortnightly meetings at the Drill Hall might find a more suitable home. We may grumble at will, call it a dust-bin or anything else that we like, but still we are obliged to confess we know no way out of the difficulty; the cause of the society is in good hands, and we may be sure that everything will be done to remedy what cannot but be regarded as a slur on British horticulture. These fortnightly meetings have greatly increased in popularity; it is not as it used to be a few years ago, when only a very few persons were seen at them, and one used to mourn when splendid collections were sent there for no one to admire. Now on most occasions there is a goodly number of visitors, and I am told that it is one of the best places for business in horticulture that we have, and that it manifestly enjoys the confidence of the gardening world is evidenced by the fact that no novelty of any value fails to find its way there to be submitted to the criticisms of the various committees.

The two great exhibitions of the society, namely, the one held in the end of May in the gardens of the Inner Temple and the great show of hardy British grown fruit in the Crystal Palace in September, were quite up to their usual degree of excellence, and although there is but little variety in the way the plants are arranged, we have to consider the circumstances under which they are brought together, and how difficult it would be to make any alteration. Folks sometimes allude to the foreign exhibitions and say how much better they are managed. But the cases are in no way analogous: abroad the plants are brought together the day before the exhibition opens, abundance of time is given for the arrangements to be carried out, and the stewards of the show seem to have despotic power of separating plants even of the same exhibit provided they think the arrangement more artistic.

I have mentioned the novelties which are being continually brought forward, and it is curious to remark that we owe these not to the explorer so much as to the hybridist, and also how they run upon the same classes of flowers. Thus, for example, amongst Orchids the run is still upon *Cypripediums*, *Cattleyas*, *Lælias*, and *Odontoglossums*. Of *Cypripediums* fourteen have been decorated, nineteen *Cattleyas*, seven *Lælias*, seventeen *Lælio-Cattleyas*, and twenty-nine *Odontoglossums*. Who grows all these? Amongst the more ordinary flowers *Delphiniums*, *Carnations*, *Gladiolus*, *Begonias*, *Narcissi*, *Picotees*, and *Roses* have been exhibited in fair numbers. The exhibitions for special flowers that have been held at the Crystal Palace have showed no diminution of interest; that of the National Rose Society was exceptionally well attended. The provincial shows, however, somewhat suffered from the weather, for the cold weather of May sadly interfered with the southern show of *Roses*, held at Salisbury; while the spell of tropical weather robbed the northern show, held at Birmingham, of a great deal of its attractiveness.

Garden literature has certainly not diminished in vigour or in popularity. The various weekly papers still contrive to interest large circles of readers. There has certainly been a great advancement in advocating the æsthetic side of horticulture. Growers of flowers are not content in filling their gardens with good things, but they want to have them artistically arranged. Such a garden is that of my neighbour, the Poet Laureate, who in his charming little books, "The Garden That I Love" and "Veronica's Garden," has taught so many valuable lessons on this subject. Miss Jekyll, of Munstead, too, who has now assumed the joint editorship of "The Garden," has laboured zealously in this direction, and the essay which she contributed to the National Rose Society, "On the Decorative Use of *Roses* in Gardens," has been most valuable for this end. Raisers of new *Roses* have also worked to carry out this object, especially Messrs. Paul & Son of Cheshunt; and there is no doubt there is a great desire among the public for information on this point. The love of flowers, which is so strong amongst us, prevails in all ranks of the community. We find sufficient proofs of this. The encouragement given by those who work for the bettering of the condition of the labouring poor in our great metropolis, have been much assisted by those who have the management of our parks and gardens, and who distribute to all proper applicants the plants which have been used in the bedding out during the summer season.

The various special societies, or rather the societies for encouraging some special flower, are still energetically supported. The National

Rose Society tells a tale of continuous advance, the number of its members being larger than at any previous time; the National Chrysanthemum Society, the National Dahlia Society, the Carnation and Picotee Society are also well supported by their members. There are some who carp at these special societies, but anyone who has watched how largely they contribute to the advancement of the special flowers which they are designed to encourage will see how ridiculous this is. There is, however, one class of flowers which seems to be in disfavour—I mean what we of the older generation call florists' flowers. The *Auriculas*, *Carnations*, and *Picotees*, *Pinks* and *Pansies* are not in such favour as they used to be. One expatiates to me on the beauty of some *Auriculas*, but coming to closer quarters I find that he is thinking of what are called fancy and border varieties, but that he has no eye for our beautiful edged and florist varieties. In the same way the *Dahlia* which is so commended is not the large and perfectly shaped flower of former days, but what is called the *Cactus Dahlia*, without form or symmetry, but attractive for its quaint and bizarre character; and so fashion changes, and societies must only accommodate themselves to its shifting moods.

And now I come to what is always the most painful part of my retrospect, when I have to call over the death roll of the past year. Some of those whose loss we have to deplore were personal and much valued friends. First and foremost we must place my valued friend, Ben Cant, the very chief of our Rose exhibitors, and the very model of what an exhibitor ought to be. I made his acquaintance many, many years ago, when I went down to Colchester and drove with him to see Mr. Hedge of Reed Hall, who was then the most celebrated of our amateur Rose growers. How genial and hearty he always was; at that time a good cricketer and a good shot, but above all these a good Rose grower and exhibitor. His stands of *Roses* were perfection; not only were the flowers good, bright, and fresh in colour, but they were never "dressed;" beautifully arranged as to colour, which, by-the-bye, is no small matter. I have seen a box of *Roses* where reds of various tints followed in succession, and the box would have been immensely improved by the placing of a white flower amongst them. Then you never saw the scowling brow or heard the bitter taunt when he was beaten; he always took his beatings in good part, and never fell foul of the judges. He had many a story to tell of his long and varied experience, and was never shy of imparting what he knew about the Rose. I always think of him as a good friend gone away from us, and I hope and believe that his sons will be able to walk in the steps of their father.

Then again, we have lost our much valued friend Mr. T. B. Haywood, who for seventeen years had been the treasurer of the National Rose Society, and with whom I had necessarily been brought much into contact, and to whose careful management the financial prosperity of the National Rose Society is greatly due. Then there is good, sturdy, honest John Laing, whom I first knew when he was one of the firm of Downie, Laird, & Laing in Edinburgh, and with whom for forty years I had much pleasant intercourse. Alfred Salter, too, has also passed away from among us; his name brings me back also to the long past. I remember well the pleasant pilgrimages I used to make to the Versailles Nurseries, Hammersmith, where his much valued father was the *doyen* of the Chrysanthemum world. I was there when the first Japanese (*Ragged Japs*, as they were called) were first introduced, but neither father or son ever anticipated the revolution they would make in the Chrysanthemum world. Both father and son were pleasant agreeable men, and the horticultural world is much indebted to them. In a humbler rank of life one has to recall the death of William Gater, who for many years was the Rose grower in Mr. Turner's nursery at Slough. It was under his care that those marvellous bushes of *Roses* were produced which so astonished foreign visitors at the great exhibition of 1866, held at South Kensington. Besides these were others not perhaps so directly connected with English horticulture, but prominent in the sciences allied to it and in other intellectual paths. Such was Sir John Lawes, so long identified with agricultural chemistry; Mr. G. J. Symons, the meteorologist; Mr. Blackmore, the novelist and pomoculturist; and the Marquis of Bute, a sterling patron of all rural avocations. The death of Mr. Philip Crowley is so recent as scarcely to necessitate mention other than to emphasise the general regret felt by all who used to meet him at the metropolitan meetings. Truly our losses have been considerable.

And now, my good friends, having told my story of the past let me, according to my usual custom, add a few words with regard to the future. We are on the threshold of the century, and some of us will only get a step or two into it. We may have our seasons of gloom, but we shall also doubtless have our seasons of joy. Many of you will not be able to enjoy your gardens as you have done; but still, if I may judge from my own case, they will afford you much pleasure and teach you many a lesson—above all, that our Master has taken the flowers of the field as a text whereby to assure us that we may ever rely upon His loving care.—D., Deal.

Sundries.

I LAST year gave you my first experience of *Chrysanthemum damp* (?), so-called, as I understand the description given in Mr. Molyneux's valuable little work. If it be really damp I can only think that damp has two effects. In the one caused, I believe, by a drop of wet on the bloom, and if it be a very full-petalled flower the base of floret seems to rot, and at last the whole bloom may fall from the stem. This, to my thinking, is not the damp, and not to be dreaded like the "genuine article" mentioned in Molyneux. There the bloom is spotted with a number of little pinky brown spots not larger than a pin's head. These very rapidly enlarge, coalesce, and the whole flower is irretrievably ruined; indeed, no light coloured bloom can, in my experience, become perfect after the minute spots have appeared. Last year it appeared when the fire had been given up two or three days, Mutual Friend, and the Carnot varieties being the chief victims.

This year I have not dropped the fire. The plants were all housed by October 3rd, but more crowded than they would be if my pocket were better filled, and certainly much sooner than I should have housed them had I been able to foresee so mild a time. A slight dusting of anti-blight powder was given to the plants once or twice, and I began to hope it would not appear; but then a bloom of Mrs. Mease and one or two Carnots showed signs, the former being very decidedly the worst. This first flower was then well dusted, and the application repeated several times, and although the florets first attacked slowly yielded, the fresh one coming out of the centre of the bloom resisted the influence of the disease, and showed no symptoms at all. The only flower on which the anti-blight seemed to have no power was A. G. Miller. I forgot till too late this year to put some boxes of quicklime about in the houses. Again, I noticed that the terminal blooms succumbed most frequently. I certainly think the anti-blight and bellows have a very good effect in arresting this disease, which I quite believe is fungoid in origin. Whether it be that I cannot say; but I feel almost certain that sulphur enters into the composition of anti-blight, and if the idea is correct it accounts perhaps for its power of arresting the disease.

I go fully with "G. H. H." in the issue of 20th ult. relative to one of the effects of hybridisation and new varieties. I amuse myself a little in that way, and of course every parent worthy the name thinks its own babe the most beautiful—in fact, "there never was such a child;" and it is just the same with the "improved" varieties of flowers, when the only difference may be a slightly deeper shade of the colour.

Much to my surprise, this year the National Rose Society seems to have been horror-struck at its former audacity in making a list of "too-much-alike" Roses, and proposed to rescind a portion of the decision, and I believe carried it; but, personally, I fail to detect any real difference between, for instance, Mons. Bonceune and Baron Bonstetten, and I question much whether the most knowing judge, presented with a leafless bloom of each, would be able to tell "t'other from which:" and after all, as I have often remarked to nurserymen, we do not grow either Roses or *Chrysanthemums* or *Liliums* for foliage.

Then I sympathise with "The Missus" in her "Gossip." Yes, it would be a grand thing "if boys and men could be trained to tidy up as they go along," but this is a fault of local authorities and corporations. These might set us a better example. How often do we find in towns even the mud carefully brushed up by the side of the street into heaps, and then left for days to be spread about again by carts driving through it or the street arab kicking it about? A sudden frost of severity may, as I have known, find from these hardened masses food for the coroner's court, and even then eyes are not opened. The steady use of eyes is a most difficult thing to teach boys and children of a larger growth. My lad at present has strict orders to go round the paths every night before leaving and remove any weeds pulled up. I'll give him his due as to the going round. He marches round at a swinging pace with an air as if not only the land he treads on, but the very air he breathes is made for himself alone. He walks over a lovely piece of groundsel in the path day after day, and several times in a day; but the offending weed escapes his eye, and at last, in self-defence, I fall foul of it myself. And yet, as boys go, he is not a bad boy; he is only following the example of the corporations and other authorities—the guardians and supporters of education.—Y. B. A. Z.

The Gardener's Assistant.*

AFTER nine months from the appearance of the first volume we have to welcome the second instalment of this old friend with a very new face. If it were only in the matter of taste and form the new edition is a great advance upon its predecessors, and not the least of its advantages lies the greater handiness and neatness of the individual volumes.

The striking feature of the present volume, as compared with the first, is the great number and variety of the illustrations, serving in the main to convey some life to the numerous lists of trees, shrubs, perennials, annuals, and other plants used in the decoration and setting out of pleasure gardens. In matters horticultural, more than in any other department of literature, the growing tendency to wealth of illustration operates most beneficially, for it serves to instruct as well as to entertain. Much of modern illustration, especially in works of fiction, is trivial and overwrought, but in the case of trees, plants, and flowers, it reproduces in best combination the good, the beautiful, and the true. Many a young gardener, to whom botanical nomenclature is a stumblingblock, will be encouraged to pore over these pages, and gradually to become familiarised with names which at first sight he found absolutely repellant.

It can scarcely be said that there is quite so much scope for originality in this volume as in the last, the chapters on propagation, transplanting, and pruning being much on the old practical lines. The designing of pleasure gardens also, which is in itself an inexhaustible subject, and worthy of a separate book, can only be generally treated, and consequently is chiefly serviceable to those possessing some natural genius in this branch of art. In speaking of trees suitable for large towns it is surprising to find that the Lime is recommended in conjunction with the Plane and the Sycamore. Certainly this advice is not true for London now, and with the growing desiccation of the soil its unsuitability for the Lime must continue to increase. In these days Cousin Jonathan pokes his nose into every English sanctuary, and hangs up the Stars and Stripes there. He has now been painting his sign upon our gardens. Thus we read of

The American Garden.—This term is usually applied to a piece of ground set apart for plants which enjoy a moist, peaty soil. Many of them are natives of North America, and they have come to be known collectively as "American plants." In its geographical application the term is somewhat misleading, numerous shrubs belonging to this group being natives of Japan, Europe, and even of the British Isles. "American plants" are for the most part included under the two natural orders Ericaceæ and Vacciniaceæ, and some of the chief genera comprising the group are:—*Rhododendron*, *Azalea*, *Kalmia*, *Erica*, *Arbutus*, *Andromeda*, *Clethra*, *Pernettya*, *Vaccinium*, *Ledum*, *Gaultheria*, *Daboecia*, *Arctostaphylos*, *Pieris*, *Leucothoe*, *Lyonia*, *Zenobia*, *Menziesia*, &c. Their special value lies in their neat dwarf habit, the beauty and profusion of their flowers, and their rich green and mostly persistent foliage. A few, however, like the *Azaleas*, are deciduous.

American plants prefer a moist, cool soil, and generally they dislike lime, so that in many limestone districts it is useless to attempt to grow them unless in specially prepared soil. It is, however, interesting to note that some few of the Heath family thrive even better where it is present: *Rhododendron hirsutum* and *Rhododendron Chamæcistus* are cases in point. Several of the *Ericas*, too, thrive in chalky districts, such as *E. mediterranea* and *E. cinerea*. Where the natural soil is free from chalk the stronger-growing species may be used in shrubbery borders. The soil most suitable is undoubtedly one of a peaty nature, but many of them may be grown in a loamy soil, if free from chalk and of sufficient depth of body to retain moisture during long spells of dry weather. *Rhododendrons*, for instance, will sometimes grow in stiff loam.

The best position for American plants is a sheltered hollow or ravine opening to the south or west. Such a position affords abundant scope for varied and informal arrangements, especially if a few other trees and shrubs are introduced, such as *Magnolias*, *Acers*, and the hardiest *Bamboos*.

The work is replete with so much information that we can only briefly indicate a few of the main features. Perhaps the most attractive chapter is that upon aquatic plants and the bog garden. The planting of the rock garden, the seaside, and town parks are noteworthy sections, and the cultivation of the *Auricula* receives the special treatment of a florist who loves it. We learn that

The Auricula (*Primula Auricula*) ranks among the oldest of garden flowers. In Gerard's "Historie of Plants," published in 1597, eight varieties of *Beares Eares* are figured and described, some of them being varieties of the *Auricula*, whilst others are not. According to Parkinson the *Auricula* must have been a favourite garden flower in

* "The Gardener's Assistant." A new edition by William Watson, The Gresham Publishing Company, Farringdon Avenue, London.

his time (1629-40). In the "Paradisus" he describes twenty-one varieties, their colours being "purple, tawny, blood-red, violet, blush, scarlet, rose, white, yellow, hair-coloured, and yellowish green with purple edge." Philip Miller, in his "Gardener's Dictionary," published in 1733, says of the Auricula: "To enumerate the diversities of this plant would be almost endless and impossible, for every year produces vast quantities of new flowers, differing in shape, size, or colour."

It is generally believed that the progenitor of the garden Auricula is *Primula Auricula*. We can easily trace the yellow and buff selfs of the early writers breaking into the flakes and stripes of the *Flora Exotica* of Count Dermatt, the green edge of Painted Lady Diamond, and the white edge of Hononrand Glory. The origin of the black and purple coloured forms is not so clear, but it is probable that the purple flowered *P. venusta* has played some part in their evolution.

The origin of the Alpine Auricula, cultivated by Carolus Clusius in Vienna as early as 1582, would appear to be *P. Auricula* and *P. pubescens*, the latter a natural hybrid producing rosy crimson flowers.

Hogg's "Treatise on Florists' Flowers," published in 1824, mentions ninety-three varieties of edged Auriculas and thirteen selfs; but no distinction is made between the green, gray, and white edges. This has been done in more recent years, the Show Auricula being divided into four well-marked divisions—viz., green-edged, gray-edged, white-edged, and selfs. The Alpine Auricula as a florist's flower is divided into white-centred and yellow-centred varieties.

Carlyle has said, "Few people think," and the habitués of flower shows probably never trouble themselves about the date of the introduction here of any plant. There are many who would probably be surprised to know that the Azalea was rare in England two generations ago thus—

Azalea indica.—The greenhouse or Indian Azalea has a history analogous to that of the Chrysanthemum in regard to its introduction, cultivation, and improvement in Europe. In the "Botanical Magazine," t. 1480 (1812), it is figured and described as "a very rare plant, which has been long anxiously sought for by cultivators of curious and scarce exotics. We believe there are not above three or four individuals of it in the country, and of these only the one in the collection of James Vire, Esq., from which our drawing was taken, has as yet produced any flowers." In the same place it is stated that Kämpfer enumerated twenty-one varieties cultivated in Japan, including white, red, yellow, purple, and scarlet, with spots of the most contrary hues. Fortune says of this species: "Every mountain and hill in the central and southern provinces of China is covered with these beautiful plants. They are like our own Heaths, and quite as abundant. By far the finest are cultivated in gardens, indeed it was only in gardens that I could find any worthy of introduction into England." The Dutch cultivated *A. indica* in 1680, but soon lost it, and it was not reintroduced until the beginning of the present century. Knight, of King's Road, Chelsea, purchased in 1833 five varieties, one double-flowered, two reds, and two large-flowered, from a sailor who had brought them from China. Low & Co. advertised twenty-one named varieties in 1841. Since then the French, the Belgians, and others have crossed and bred these Azaleas with really wonderful results.

In summarising the merits of this excellent work, it may be said that by it the path of the earnest student is cheered and facilitated without in any way detracting from its usefulness as a sound guide to horticulture.

Lapagerias.

LAPAGERIAS are among the few plants which succeed well with abundant root space. The method to follow with a plant established in a small pot as received from a nurseryman is at once to remove it into one 8 or 9 inches in diameter, draining the pot well, and employing as compost turfy loam and peat, with nodules of lime rubbish freely intermixed. After a time growth will commence, and in due time the pot will become full of roots, when the plant must be shifted once more into a pot at least 4 inches wider than the one to be set aside. This shifting must be continued if the plant is to be kept growing in a pot, as the more abundant the roots the stronger and more numerous will be the shoots annually thrown up from the base of the plant. It may be stated, however, that a 13-inch pot will, with occasional rich surface-dressings supplemented by waterings with liquid manure, keep a plant in good condition for several years, but not so luxuriant as if more liberally treated as to root space. Returning to the start of our typical plant, this growth must be carefully trained on a string under the roof of the structure in which the plant is growing. Year by year the same care must be taken with young shoots which may be produced.

To prevent overcrowding the first spindly growths should be cut off close to the soil, and all along the future of the plant must be studied by allowing at least 6 inches between each main growth. The above is the only certain mode of obtaining large blooms and plenty of them. It may be noted here that this plant is not particular as to

aspect. It does well full in the sun, in the shade, or under conditions between these two; plenty of root-room, head-room, and water apparently being the conditions most favourable to its healthy growth.

Though I have plants growing in pots under the conditions above recommended, at the same time I would recommend even more space at the roots than can be provided by pots, and, in fact, prefer planting out in beds more or less restricted in size to the room at command. The progress a plant makes after being planted out is really astonishing, and the number of flowers produced for at least six months of the year is very great indeed. The compost should be of an open nature. Plants I have had to do with, put out in a soil in which Camellias flourished, made no progress until a different kind of compost was employed.

I have a large specimen which was planted in a bed specially made for it several years ago, the compost used being the older roots of *Lastrea dilatata*. This year the blooms have declined considerably in size, but this I expect to overcome by a thick dressing of rich material and occasional manurial waterings. These old plants seem to be very prolific of seed pods, which to anyone wishful of increasing stock would be the most ready means of doing so. In the case of the white variety this would of course be a risky way of promoting increase, as the plants resulting from such seed would require to be flowered before being sure as to colour.—B.

Culture of Maidenhair Ferns.

(Concluded from page 574, last vol.)

Ferns in Hanging Baskets.

BASKETS for Ferns may be made of almost any material. Cork, oak, or wire is the material generally employed, wire being the most lasting of all. Line the baskets with moss before filling them; it is necessary to prevent the soil from falling through the apertures. When the basket has been lined it is a good plan to place two or three large pieces of crocks on the bottom. Use similar soil for planting to that recommended for potting. Care is necessary not to fill with soil too high for the water to drain over the sides instead of running through the basket. Some growers prefer leaving the plants in the pots and filling around with moss; but planting out I find is a much better plan. The time for filling baskets is the spring, and the plants may be placed in as the cultivator prefers, either for the fronds to come through the bottoms and sides, or in an upright position as when growing in pots. The Maidenhair is not so often grown in baskets as some of the other *Adiantums*; but, still, well-grown plants in baskets are not to be overlooked, and the baskets can be made still more attractive by planting a little *Selaginella* or *Ficus repens* around the sides. The last-named has a pleasing appearance, and it can be easily propagated, for when grown well the long shoots send out roots at every joint. It is very useful for covering the bare walls of ferneries. Hanging the baskets over other plants, as sometimes practised, is injurious to those beneath, for when watering takes place it is impossible to avoid the water coming in contact with the other plants, unless the baskets are taken down for watering each time it has to be done. Plants can be grown in baskets for two or three seasons if a little top-dressing is given, and liquid manure supplied freely during the growing season.

Ferns in Cork Pouches.

Maidenhairs can be well grown in cork pouches, and they give a natural appearance to the house. Virgin cork or bark from our native trees is generally nailed on wood or the walls for giving the place the rustic appearance so necessary in all Fern-growing arrangements. The soil already recommended will suffice to grow healthy plants. When growing in pouches the plants require very careful attention with regard to watering, as the soil in such places quickly dries, particularly when situated near the pipes, or in other dry parts of the house.

Ferns on Stones.

Ferns can be grown well either planted among or upon rough pieces of stone. Little rockeries are often made alongside the hot-water pipes used for heating the house, and if the Maidenhair is here planted out it will give the sides of the walks a cheerful appearance. Growing entirely on burrs is sometimes practised, and it is astonishing what healthy fronds the Ferns will throw up when depending on the stone for their food. The best way I know of thus growing them is to scatter some fine soil on the stones and plant small seedlings; these will be found, if well watered, to grow well. Tufa is a very useful stone, and well adapted for rockery making; its colour is brown, varying from light to dark. It is a loose and porous kind of stone, formed by depositions, and is common in some parts of Derbyshire, where it is quarried for these purposes.—P. G.



Lycaste Notes.

ALL the members of the genus to which this well-known plant belongs are essentially Orchids for beginners, being very free blooming, varied and beautiful in colour, easily procurable, and of the simplest culture. *L. Skinneri* may be grown in the cool house with *Odontogloss* and similar Orchids, this being, in fact, the most suitable place for it, but it is by no means hard to please in respect of temperature. It may be accommodated in a shady frame during the summer months, removing it in the winter to a cool house, and if the temperature does not go below 40° it is quite safe, though probably the flowers will be rather later; or, if care be taken to keep it free of insects, it may be grown in an intermediate or *Cattleya* house, though cooler treatment is preferable.

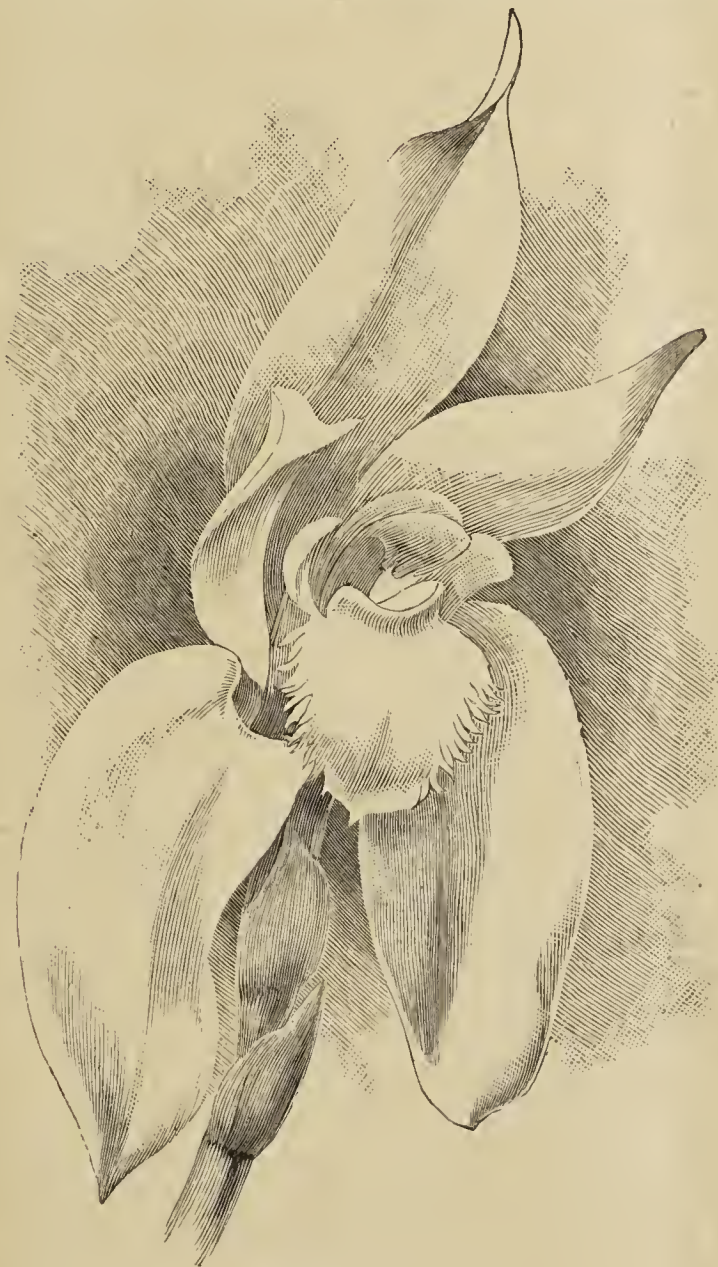
In any case a shady moist position must be found for it, the somewhat thin and tender foliage being easily injured by bright sunlight, and also falling a prey to red spider if the atmosphere is kept too dry about it. The cleaning of the foliage is an important item in the culture of this Orchid, for on the health of this depends to a great extent that of the plant. If scale or red spider are seen to be getting a foothold no time must be lost in setting about it. Tepid, soapy water, in which a little strong shag tobacco has been steeped, or to which a little tobacco water has been added, should be used, mixing enough to fill a vessel in which the plant may be entirely immersed. Dip each one separately and lay them on their sides, so that the liquid does not run down into the compost, and before it has time to dry each one must be carefully and thoroughly sponged leaf by leaf. Afterwards a good syringing with clear water will complete the business and wash off any chance insect that may remain.

The roots of *L. Skinneri* are capable of pushing into a more substantial compost than many of the pseudo-bulbous kinds, but they must not have so heavy a medium as the truly terrestrial species. About equal parts of peat fibre, chopped sphagnum, and mellow loam will answer well as the basis of the compost, but a few pieces of charcoal, crocks, or both, must be mixed with it to lighten the bulk and to insure a supply of air to the roots, without which no Orchid will be satisfactory. Large plants will not need to be repotted very often, so when this is done it is well to give thorough drainage and protect it, so that the peat does not silt downwards. The plants being shaken out of the old soil, reserving all the roots that are healthy and cutting out all the decayed parts, they must be placed in position with the base of the pseudo-bulbs just below the level of the rim of the pot. Spread the roots out thinly, and fill up to the bulbs with the compost, adding more potsherds if it is seen that the peat and other materials are likely to run too closely together. Frequent sprinklings will obviate the necessity of much root watering at first; but if the repotting takes place in spring the roots will soon again be on the move, and an increased supply will be needed.

The plants are growing all through the summer months, and generally finish up their pseudo-bulbs in late autumn, and though they usually rest awhile they must never be dried at the root. The flower spikes push up in early winter, and if the bulbs are strong it is remarkable what a quantity of flower they produce. Each spike emits a single blossom; these in the typical plant are nearly white on the sepals and petals, the lip shaded with rose and profusely spotted with crimson. There are varieties innumerable, no two plants producing flowers alike in every particular.

This fact makes the species one of the most useful Orchids for house decoration, but unfortunately the plants are often kept in far too long, this being detrimental to them. Still, they are long-suffering in this respect also, and if kept fairly well watered at the root and the foliage sponged occasionally they soon pick up again when placed in more congenial quarters. As hinted above, the temperature in which they are grown has a marked effect on their flowering season, and this may be considerably prolonged if sufficient plants are grown by keeping them in various temperatures and by starting them at different times. All the varieties are natives of Guatemala, whence the typical form was introduced in 1842.

Though I have thus far referred only to the handsome *L. Skinneri* I should like to make very brief reference to another member of the genus. This is *Lycaste costata*, which is not nearly as extensively grown as are some kinds, and which is decidedly worthy of greater attention than is accorded to it at the present time. The colouring of the bloom is very peculiar. The sepals and petals are greenish, while the lip is white or yellow tinted. It was received from the Cordilleras several years ago.—ORCHIDIST.



LYCASTE COSTATA.

Cattleya Dowiana Rosita.

No one who saw this fine variety at the Drill Hall on December 18th could fail to have been struck by its beauty, the fine rosy red suffusion on the petals being remarkable, while the lip was very good in shape and colour. But while acknowledging it as quite distinct I could not help thinking that it was remarkably like some forms of *C. Hardyana* I have seen, both in the contour of its blossoms and in the colour. As home-raised plants of *C. Hardyana* flower it will be interesting to note if any of them show a likeness in their markings to these varieties of *C. Dowiana*, for this variety is equally as distinct from the type as *C. D. aurea*—parent of *C. Hardyana*—this latter being often labelled *C. aurea* as if it were a species.

The typical *C. Dowiana* was first discovered in a region many miles from that in which *C. D. aurea* grows, and it would be very interesting to know where this individual plant was gathered and whether there is any possibility of its being a hybrid between *C. Dowiana* and *C. gigas*, and, therefore, a varietal form of *C. Hardyana*. It is a very lovely plant in any case, and well deserved the first-class certificate awarded it by the Orchid Committee. The plant was strong and evidently well grown, the flowering bulb being stronger than those immediately preceding it. This valuable form was shown by M. Chas. Maron, of Brunoy, France.

Oncidium pectorale.

All or nearly all the South American *Oncidiums* are showy Orchids, and this is no exception. The flowers are of that fine combination of chestnut brown and yellow that is seen in such perfection in no other genus of Orchids, and it is quite distinct from any other *Oncidium*. It does not appear to be very fully represented in collections; at all events it is seldom seen. Like most others from the Rio district, *O. pectorale* likes a moderately warm house and not very much compost. But it is a great help if each of the young leads can have access to a little raw material, as the roots enter this very freely to the benefit of the plant.

Frequent additions of this class are, however, apt to make the bulk too thick, and to cause souring, and this fact must not be lost sight of. By removing a little of the old material and introducing a few small lumps of charcoal and potsherds with the new, the risk will be in a manner small, but to keep on piling on top-dressings without this care is not reasonable. The atmospheric conditions need careful watching, on the one hand to prevent an overdry state, and on the other to avoid saturation, especially at midday. A very moist atmosphere without due regard to a proper balance of air causes a softness in the growth that no subsequent care can alter, and in consequence the flowers produced are few and not of the best quality.—H. R. R.



Planting Roses.

THE Rose with all its beauty, grace, and fragrance, still retains its hold upon the affections of the British people, and its popularity seems likely to continue as long as the Anglo-Saxon race remains a dominant power in the world. The quiet stay-at-home Britisher can perhaps scarcely realise how much the roaming sons of our Empire have done to popularise the Rose in distant quarters of the globe, but wherever the Union Jack flies there the national flower soon follows if there is the slightest prospect of its being successfully grown, and thus creates a connecting link between the "old home and the new." We at home, however, know that each year adds to the list of enthusiastic Rose growers; we know that no garden lover ever has too many Roses, and to grow and show them in "the highest phase of their possible beauty" is the great ambition of not a few. 'Tis well that it is so, for what more healthful and pleasant recreation can be found than the culture of "Flora's queen?"

Given a fairly good soil and a desire to excel, it is not a difficult matter for anyone to grow good Roses, and I might also add that it is also quite easy to make mistakes, and thus secure only unsatisfactory results. Condition in regard to soil and climate vary so much, that no matter how much one may know about the matter it is always necessary to cultivate a habit of close observation and vary cultural details according to the particular circumstances of each case. Roses may be successfully grown on nearly all soils, but a good deal of extra trouble is entailed in securing fine results on light poor ones. The ideal Rose soil is one which, though moderately stiff, is still well drained. Light soils are invariably well drained, and in such cases the attention of the cultivator should be directed towards making them closer in texture as well as enriching them.

Planting may be successfully performed from early November till the middle of March, but autumn planting usually gives the better results the first season in light soils. In heavy cold ones early spring planting is sometimes to be recommended, as there is then no danger of the roots decaying should long periods of wet prevail. Rose growing is greatly simplified if beds or borders can be devoted entirely to them, as when planted among other flowers or crops it is sometimes difficult to give the Roses the attention they need. When preparing light soils trench two spits in depth, and work into the lower stratum plenty of cow excreta or well decayed horse or farmyard manure. The surface soil may also receive a lighter dressing provided it is kept away from the roots at planting time. When beds are formed on very stiff soil it is sometimes necessary to take out the soil to a depth of 2 feet, break up the sub-soil, and add a few inches of rubble or similar material to act as drainage. When the soil is returned, if rather strawy manure is mixed with it, it is kept comparatively open and porous, and if these preparations can be carried out early in the autumn the soil is usually in better condition for working in spring. I ought to have mentioned previously that the addition of stiff soil or clay to a very light one improves it greatly. It should not, however, be added in large sticky lumps, but chopped up finely, or better still, dried in summer, pounded and stored for use.

When standards are planted in isolated positions large wide and deep holes ought always to be made, and a layer of manure placed in the bottom, for although we like to encourage surface roots it is also an advantage to have others deep down in the soil to draw up moisture during periods of drought. When planting Tea Roses I like to place the stock a few inches below the surface of the soil, so that the Rose shoots may send out roots, as it is very annoying during severe winters to have the shoots killed to the ground line with nothing but the stock left alive. Such plants are then, of course, useless. Deep planting, in the case of fruit and other trees, is at all times to be avoided, but with Tea Roses it may be practised with advantage if not carried to the extreme.

In the case of Hybrid Perpetuals there is not the same necessity for deep planting, as the shoots are seldom killed low down by frost, and with strong growing varieties it is often an advantage to have a slight portion of the stock above the soil to prevent the production of strong suckers. In all instances damaged roots and the points of all others should be removed, and the parts left be spread out evenly before being covered with soil. When planting in heavy soils, if a little lighter material can be placed over the roots it helps to hasten root production. Tread a light soil moderately firmly about the roots, but press a heavy one very little, as it will invariably bind closely enough to the exclusion of that necessary element—air. In all

instances mulch the beds after planting with partially decayed manure.

On page 504, last vol., Mr. E. Molyneux has advanced some exceedingly interesting and instructive remarks about climbing and other garden Roses, I will therefore only deal with the H.P.'s and Teas. The former are a popular section with hosts of growers because they are so hardy, and all who live in cold districts should plant them more largely than their delicate sisters the Teas. My favourite form of tree is the bush, as it can be lifted occasionally, and thus kept within due bounds; and, moreover, no style of tree is better adapted for the production of large blooms. Maidens, the first year after planting, usually produce one or two good blooms just when those on the established plants are over, and for that reason prove extremely useful.

In regard to varieties, there are many queens of greater or lesser renown, but the lowliest among them is a gem among floral treasures which none need despise. The following list, however, contains some of the best new and old varieties. Alfred Colomb, bright red; A. K. Williams, reddish crimson; Baroness Rothschild, delicate rose; Captain Christy, flesh; Charles Lefebvre, velvety crimson; Comtesse d'Oxford, carmine; Earl of Dufferin, crimson; François Michelin, rose; Général Jacqueminot, crimson scarlet; Her Majesty, La France, lilac rose; Madame Charles Wood, bright red; Marie Baumann, light crimson; Mrs. J. Laing, pink; Margaret Dickson, flesh; Reynolds Hole, maroon and crimson; Merveille de Lyon, white tinted rose; and Susanne Marie Rodocanachi, rosy cerise. The above are all H.P.'s.

The following Teas are all good. Annie Olivier, buff shaded rose; Bridesmaid, clear pink; Catherine Mermet, pink; Comtesse de Nadaillac, apricot yellow; Grace Darling, pink; Hon. Edith Gifford, white tinted rose; Innocente Pirola, creamy white; Jean Ducher, salmon yellow; L'Idéal, metallic red; Madame Lambard, bright red; Maman Cochet, blush rose; Niphetos, white; Perle des Jardins, orange yellow; and The Bride, white. How fast the days, the years, and even the centuries roll by! but among all the changes which surround us the Rose of England sits firmly in her high estate. May none depose her during the century so soon to begin; and throughout its course may the flower which we all love so well shed her beauty and fragrance in still greater spheres, and bring to those who cherish her a full share of happiness and peace.—H. D.

Winter Cucumbers.

THE time is at hand or present when fruit is scarce, and the prices, if at all, run high. Winter fruiting plants are often planted so soon, and fruit so early, as to be incapable of doing much when the days turn in their favour. Nevertheless a good plant is of importance, and unless there is command of plenty of heat young plants have very little chance against those that have a good hold of the soil and have covered a considerable extent of trellis before the dull season commences. Circumstances often make all the difference in culture. Those having light and well heated structures make little account of the weather, and always prefer young to old plants; whilst strugglers against frost and sunless skies, with barely enough heat for mild weather, and dark-roofed structures from small panes and many laps, are ever on the tiptoe of anxiety and pin their faith to old plants, which have little "go" in them at five months from the seed.

Light is very important for young plants, which, from a September sowing, are laden with fruit about the thickness, and half the length, of a single barrel gun, green as grass, and carrying a blue bloom, which are all bespoken for Christmas and the new year at exactly double the price of the older plants. The glass must be clean, both inside and out, and coverings are used over the roof-lights at night. Even mats may be used over the doorways in cold weather to prevent the inrush of cold air when the doors are opened.

Feeding is practised on the principle of root production, earthing or surface dressing with sweet, warm, lumpy loam, and encouraging with top-dressing of superphosphate (a great root multiplier), and then follows the potash and nitrogen, sulphate of potash and nitrate of soda, or sulphate of ammonia, in equal parts, with superphosphate to keep up the root action and the supply of phosphorus. Fresh loam, a sprinkling of superphosphate, when roots are plentiful, a dusting of the potash and nitrate or sulphate, is the order of the day, and with that, according to the judgment of the grower, Cucumbers "come and go" in from ten to twenty-one days, just as the weather permits.

Where Cucumbers are obtained from frames or pits heated by fermenting materials, some fresh Oak or Beech leaves should be thrown together, with one-third of stable litter, and, if necessary, moisten so as to induce fermentation. The heap must be turned when warmed through, turning outside to inside, thoroughly incorporating, alike to induce a genial warmth of the materials and to sweeten them.—PRACTICE.

The March of Civilisation.

English Vegetables in East Africa.

THE vegetables shown on the photograph which accompanies these notes were grown by me during the time that I was engaged on a sugar estate about 100 miles up the Zambesi River in Portuguese East Africa. The manager, Mr. J. P. Hornung, took a keen interest in the culture of vegetables, and, as will be seen, we had a good collection. Salads, especially Lettuce, grew remarkably well, as did also Cauliflowers, Brussels Sprouts, Savoys, Peas, and Tomatoes; in fact the garden well repaid the labour bestowed upon it. To quote Mr. Hornung's words, "It was the envy of all Europeans who visited that part."

These vegetables were grown in the cool season—viz., from April till September. During the remaining six months of the year it was almost impossible to grow English vegetables, as the hot drying winds from October till December parched up everything, and from January till March high temperatures and heavy rains prevailed, the thermometer going as high as 112° in the shade at times. Melons were

rapid growth were not well flavoured, although they formed a pleasant and agreeable change from the *Batatas edulis* (Sweet Potato)—our staple vegetable during the hot season, and of which the natives (Kaffirs) grew in considerable quantities, both for their own consumption and for sale to the Europeans. English Potatoes would not keep long after being lifted; if left in the ground until thoroughly matured they suffered considerably from the depredations of insects, especially the white ants, which are very numerous in Africa. Another reason why Potatoes could not be grown successfully was, in my opinion, the difficulty in obtaining good seed at that period of the year. The "sets" were sent from Europe about January, and arrived in the tropics in the hot season, probably overheating on the ship while *en route*. To anyone who has studied the delicate qualities of the Potato it will be obvious that the tubers must suffer materially, and it could not be expected that they would produce the best results. The Egg Plant, *Solanum ovigerum*, grew well, was very prolific, and being a tropical plant could be brought into bearing before other vegetables.

Few vegetables are grown by the Kaffirs; occasionally some plants of the Cabbage tribe are seen growing on the river banks near the



ENGLISH VEGETABLES IN EAST AFRICA.

practically the only plants that could be produced with any success in the hot season, and these required great care and protection from the heavy rains.

Unlike the majority of English vegetables grown in the tropics those mentioned were of very good flavour, owing, I believe, to the comparatively low night temperature, which ranged from about 46° to 66° in the cold season. Heavy fogs were also prevalent at this period, rising about 4 A.M. and often lasting till 8 or 9 A.M.; these of course helped the vegetables materially by keeping them cool and moist, and at the same time lessened the labour of watering. From the time of sowing seeds until the plants were well established it was necessary to protect them from the burning sun; this was done by making a framework of stakes about 2 feet above the ground and laying grass mats over them. By adopting this plan seeds could be sown in March—provided the heavy rains had ceased—thus forwarding their growth, so that they matured about July or August (the coolest period), and gave the best possible results.

Potatoes could be grown from March till July, but they were not a great success, as the tubers were never very large, and owing to the

villages. A small variety of Tomato, too, grows on their plantations; though small they are of excellent flavour, and though they are grown without any trouble in the way of staking or cutting out superfluous growth, they fruit abundantly and seed themselves. The chief products cultivated by the Kaffirs are Sweet Potatoes, Mapira (Guinea Corn), and Machuweira (this is the Kaffir name; I do not know the botanical equivalent), the corn from the two latter being converted into flour by means of pounding in a mortar. Maize is seen in small quantities only, and is usually eaten green (they are excellent if boiled or roasted and served with melted butter, and in this way are much appreciated by the majority of Europeans living out there). Rice is also grown in the swampy districts, and on some of the Kaffir plantations patches of *Manihot Aipi* (Cassava) are seen.

The Kaffirs, as a rule, grow only enough for their own consumption, although some of them sell a portion of their products to the Indian traders, instead of working for the Europeans to earn money for the hut tax. Others again, living in the forest, collect rubber from the *Landolphia* sp. (which grows in large quantities, the vine climbing to the tops of the highest forest trees), and sell it or exchange for

merchandise with the European and Indian traders. They are, however, careless and destructive in their methods of rubber collecting. Instead of making a V-shaped incision in the bark of the rubber vine, they slice off large pieces of the rind indiscriminately, and consequently the plants suffer a great check and do not afterwards yield so well. These Kaffirs, like most of the African tribes, do not care for hard work, but if treated firmly and well watched they make good labourers.

The country generally, as far as I travelled, is heavily wooded, though the timber is not of much commercial value; the trunks of some of the largest trees are converted into canoes by the natives. Sugar is grown by one or two European companies on the flat districts near the rivers. During the past few years locusts have played sad havoc on the sugar estates and plantations; they eat the young and tender growths from almost every tree and plant in their course. Various experiments have been tried to rid the country of them or prevent the wholesale destruction of the crops, but with small success. If Africa could be cleared of locusts and mosquitoes it would be much more productive and far healthier.—ARTHUR H. COOPER, *The Gardens, Walton Oaks, Epsom.*

Fruit in Store.

THE preservation of hardy fruits, and more particularly Apples, during the winter and spring months, no matter how careful one may be, is always an undertaking the result of which cannot be foreseen. Even in well-appointed fruit rooms, or what are considered such, weather influences, especially hard frosts with sudden changes to thaw, have a very marked effect on fruit in store. The condition of the trees, which, unlike the weather, the gardener has it in his own hands to improve, is another most important item in determining how fruit will keep, those furnished with abundance of fibrous roots and in robust health, not permitted to carry crops beyond their ability to finish perfectly, producing that of the best keeping quality. Time also must be permitted the fruit to mature on the trees before gathering. By maturing I do not, of course, mean ripening; there is a stage in the development of both late Pears and late Apples which, before it has been reached, it is not good for the future of the fruit that it should be removed from the tree. A fortnight in late autumn will not only affect the keeping of a variety that ripens in May, but it will also largely affect its flavour, though the general appearance of the fruit itself when gathered may not vary.

The method of storing on shelves as generally carried out in the present day cannot perhaps be improved upon, but when we turn to methods adopted long ago and discover it was common to keep Apples the year round it must be conceded the admittedly imperfect means in the power of those people produced much better results than are secured now. They seem generally to have kept all late Apples under a thick air-tight covering, and almost always the fruit was laid in heaps, and not singly in layers.

In the miller's lengthy description of the carpenter's youthful wife he tells us, "Hir mouth was sweete as bragat is or meth or hoord of Apples layd in hay or heth." The writer of "The Fruiterers' Secretes" describes the several ways of preserving Apples in Queen Elizabeth's days with much clearness of detail. From Christmas to March they were preserved in a common room, from March till May in a ceiled room with the sides plastered, and from May till Michaelmas in a dry cellar. Rye straw was to be substituted for plaster in cases where a plastered apartment could not be had, and the walls and ceiling covered with it. The fruit was laid on and covered with sweet straw. It was turned and decayed specimens removed at Shrovetide, then once a month till Whitsuntide, and after that once a fortnight as long as any fruit remained. The rooms were freely ventilated during fine weather. That very experienced old-time pomologist, William Lawson, advised that "Long keeping fruit would bee turned once in a moneth softly, but not in, nor inmediately after, frost. In a loft cover well with straw, but rather with chaff or bran, for frost doth cause tender rottenness." Thus it would appear that so much care in covering and uncovering was largely, if not altogether, as a protection against frost.

In an earlier work, in French, it is recommended to remove the straw altogether in February, and at the same time to lay out the Apples in a single layer on boards. Late sorts were also stored in barrels, in jars hermetically sealed, and even coated singly with loam. When Langley wrote of fruits the practice of laying Apples in heaps still prevailed, and clean Wheat straw was employed as a covering, the fruit being examined "every third day!" His contemporary, Stephen Switzer, condemns straw, though he admits that hitherto its use had been universal, and advises instead the employment of moss well dried. Frost was to be kept out by means of a fire. About this time the practice of sealing the ends of the stalks came into use. The finer fruits, later, were hung from the ceiling, from which they were suspended singly by means of a string attached to the stalk. Some have also been curious to lay the fruit with the stalk upwards.

Lord Bacon made many experiments with Apples, some of which

had a marked bearing on their keeping qualities, and he recommends dipping the fruit in honey as a good preservative. With regard to frost, William Cobbett declares that it does no harm to Apples, provided the room is darkened and preserved wholly dark during several days after a thaw has supervened. And one might continue to cite examples such as the above to prove that as there are more ways than one to Jerusalem, so the preserving of Apples may be effected in many ways.

Notwithstanding Cobbett's opinion regarding the all but negative effects of frost on Apples, experience, as already indicated, proves that it really affects their keeping properties injuriously, and though a low temperature varying only slightly is undoubtedly essential, a little artificial fire heat—I use a Rippingille stove during frost and continue it during the first days of thaw—affords a good corrective. Ventilation also requires attention. While the fruit is being stored and a little longer—or say till the beginning of December—air should be admitted freely, windows standing open night and day while fine weather lasts. The effluvium rising from freshly gathered fruit is by this means not at all apparent, and soft early fruits I do not find to keep less well under these conditions. Except during frosts I do not think it wise to exclude air, and means to preserve the enclosed atmosphere sweet and fresh should be provided. One must be very careful in covering fruit, Apples so quickly become tainted, and during protracted frosts I have used paper, which leaves no bad taste. Windows at the same time should be thickly covered with dry straw. This, with a slight heat to preserve an equable temperature, prevents the skins of the fruit from injury. Darkness is certainly not essential for the perfect keeping of fruit until the beginning of winter; thereafter it would appear to exercise a happy effect in the preservation of both Pears and Apples. Some varieties of Apples may be kept fresh long after they are worthless and have lost flavour; others when at complete maturity cannot be longer preserved. It is the business of the custodian of these fruits to treat all such intelligently, as there is loss in both instances by keeping them too long.

With regard to late Pears; there can be no doubt that cultivation exercises on these, even more so than on Apples, a very marked influence. But apart from that, it is remarkable that they affect certain positions in the same room rather than others. If the fruit room is of small dimensions this of course will not be so noticeable, but in a good-sized store I have found that they show very marked preferences, and as a rule it may be stated as an axiom that late sorts should be preserved in the coolest and driest portion. They have always exercised much of the gardener's care, and 200 years ago, at least, the best writing paper was recommended as a good material on which to lay keeping Pears. I cherish the idea that they keep better on open lath-work, where the air touches them from all points, than anywhere else. If possible the fruits once stored should remain untouched till ripening.—B.

Gardening Books.

AT once interesting yet perhaps somewhat disappointing would be a complete list of all the books on gardening that have been published during the past century. Up to 1850 a few ponderous works made their mark in horticulture, for in the earlier days of the century gardening youths studied these books with considerable zest when they could gain access to them. Since 1850, however, the growth of gardening literature in book form has been marvellous, and it is possible that during the past twenty-five years more books have been published than was put into commerce during the previous seventy-five years. Gardening books have of late been rendered less ponderous and didactic, and much more attractive. They are also far more liberally illustrated, and for their matter and get-up are much cheaper than similar books were in the years preceding.

We have books now on every conceivable subject or phase of gardening. Nothing seems too small or too large for the writers of books, and the student to-day finds if the field of observation in books is an immense one, that at least his efforts to become acquainted with gardening are greatly assisted by book study. All the book study in the world, however, will not make a gardener alone. Practice and the observation derived from practice will make a good gardener of any intelligent person, but with the addition of books the development is far more rapid, and the produce much more perfect.

Possibly the wealth of books published bewilders the student, and he finds it hard to sift the corn from the husks. Whatever may be the charm and refinement which may attach to gardening, it is yet an avocation that can only furnish success when it is very practically understood. It is that need which proves to be so great a stumbling-block to many, especially to those who have to evolve gardens and gardening out of their imaginations.—A. D.

NOTES & NOTICES

Recent Weather in London.—The New Year has not come upon us under favourable climatic conditions. On both the first and second days the metropolis was enveloped in a dense fog. The last two days of the old year were wet and cheerless.

Kew Observatory.—Once the residence of King William IV., Bushey House, Hampton Court, is now undergoing extensive alterations for conversion into a laboratory in connection with Kew Observatory. Tenantless since the Duc de Nemours left it two years ago for Wimbledon, Bushey House lies some distance back from the main road through the park, and is admirably suited for its future purpose. It is intended eventually to transfer all the Kew laboratory work to Hampton.

Sulphate of Copper for the Greek Vineyards.—It is reported in metal circles that a large order for sulphate of copper was likely to be placed in this country have a good foundation. It appears that the failure of the Currant crop in Greece has prompted the authorities there to give an extensive trial to the dressing of the plantations with sulphate, and inquiries in well-informed quarters have elicited the information that negotiations have proceeded so far as to ask makers and others to forward samples, the quantity which will be required being stated to be between 5000 and 10,000 tons. It is said that a large Greek bank has signified its willingness to take the matter up on behalf of the Government.

Cape to Covent Garden.—Notwithstanding the present unsettled condition of the outlying parts of Cape Colony, a most encouraging account of the progress of fruit cultivation for export round Capetown is given by the secretary of the Cape Board of Horticulture and Fruit Exporters' Association, now in England on a six months' holiday. Started only about seven years ago, the industry has grown so rapidly that for the past four years Pears, Peaches, and Apples, Grapes, Plums, Nectarines, Quinces, and the like have been coming regularly into Covent Garden, and that, too, at a time of year when we could not look to any other quarter for such supplies. Between 400,000 and 500,000 trees, says Mr. Persse, have been planted during the past seven years solely to bear fruit for exportation, while it is calculated that the Colony also possesses 80,000,000 Vines. The present season has up till now been exceptionally favourable, and the export should be considerably greater than last year. Cape Plums, as yet the heaviest item, are expected to reach Covent Garden about the middle of January, some 5000 to 10,000 boxes of which will be contributed by Mr. Cecil Rhodes. Early in February Pears, Peaches, Grapes, and other fruit should begin to arrive, with continuing weekly shipments until the end of April or beginning of May. The Grapes exported last year totalled, roughly, 340,000 lbs., and this figure will be surpassed in 1901.

The Late Mr. Crowley—Although London was suffused in wet fog the sun shone out warmly on to the churchyard of Shirley, Croydon, when the late chairman of the Royal Horticultural Society's Fruit Committee was there laid to his eternal rest. Apart altogether from the fact that this somewhat elevated burial place, which surrounds the pretty church of Shirley, is a favourite place of sepulture with the wealthy of the locality, special fitness attached to it as Mr. Crowley's burial place, because it is the churchyard of his old and deeply attached friend, the Rev. W. Wilks, who resides, as the vicar, close by. What wonder if these two men had between them a strong link of esteem. Had not one as treasurer, he who is taken, and the one as secretary, he who is left, been so instrumental during their respective terms of office in lifting the Royal Horticultural Society from the Slough of Despond into which South Kensington had cast it, into a period of prosperity and of popularity, such as in its earliest of palmy days it had never enjoyed? Mr. Crowley was as treasurer no mere ornamental official, he was emphatically a business man, and he discharged the important duties of his office with the fullest satisfaction to his colleagues and in the interests of the society. As chairman of the Fruit Committee he was, if not strong, always kindly, genial, and impartial. We need in his successor the same estimable qualities, with more firmness, and the same complete absence of bias.—A. DEAN.

The Royal Gardeners' Orphan Fund.—The Hon. W. F. D. Smith, M.P., has kindly consented to preside at the next annual festival of this institution, which will take place at the Hotel Cecil on Tuesday, May 7th.

National Dahlia Society.—The annual meeting of the National Dahlia Society will be held, by permission of the Horticultural Club, at the Hotel Windsor, Victoria Street, S.W., on Tuesday, January 8th 1901, at 2 P.M. Agenda:—Report of committee for 1900; financial statement; schedule for 1901; and other business. Notice has been given that the following change in Rule XI. will be proposed:—for "compete" read "exhibit."—J. F. HUDSON.

Mr. J. H. Krelage.—Mr. J. H. Krelage, on his retirement from the presidency of the General Bulb Cultural Society of Haarlem, which office he has uninterruptedly held for forty years, was presented by the members with a magnificent life-sized portrait, painted by the renowned Dutch artist Haverman. The society when started in 1860 consisted of nearly 200 members, and nowadays has about 2000 members, all interested in bulb culture, and twenty-eight local sections in the bulb district. The president elect is Mr. J. H. Wentholt.

Grafting Up to Date.—At a recent meeting of the Academy of Sciences in Paris Mons. G. Bonnier presented a note concerning some very interesting experiments in grafting plants, the results of which contradicted the generally accepted opinion that only plants belonging to the same botanical family can be successfully grafted upon one another. Mons. Bonnier showed that recently plants of entirely different families had been grafted with success—for example, the Maple upon the Lilac, the Kidney Bean upon the Castor Oil Bean, and the Cabbage upon the Tomato.

The Drill Hall Meetings.—It is difficult to refrain from sympathising with our friends who visited the James Street Drill Hall from far fair Perth in August last, and found one of the small shows which occasionally occur. To fully realise the character of these shows it is needful to visit each one throughout the entire year, as for one that may be restricted in quantity of material, three will be found to be very full ones. But August is not a good month to look in at the Drill Hall. The best shows are usually found in April, May, June, and July, and again in September, October, and the early part of November. But those privileged to attend the meetings regularly must realise that even with the strong trade interest which attaches to them, they constitute a remarkably attractive and usually beautiful as well as a wonderfully varied series all the same. During any one year there seem to be few things in horticulture that are not there represented.—A. D.

Rosherville Gardens.—Should no philanthropist come forward and redeem Rosherville Gardens from their impending fate the site will, no doubt, be speedily built over, and thus would disappear, says a daily contemporary, almost the last of the more important of London's private pleasure gardens. During the past forty years there has been a gradual vanishing of such places. Vauxhall, the most famous of them all, went in 1859; Cremorne, which was in a sense its successor, followed in the seventies along with the Surrey Gardens, the scene of Spurgeon's early triumphs. About the end of the eighties the Horticultural Gardens at South Kensington suffered the same fate. Rosherville, "the place to spend a happy day," was a famous spot in its generation. Its 20 acres or so occupied the site of an old chalk quarry, and the diversified surface left by the workings enabled the landscape gardener to produce some very pretty effects.

A Reminiscence of Mr. William Dodds.—A few who had knowledge of the Dahlia activities in operation fifty years ago will remember the name of this veteran Dahlia raiser, who died a short time ago at the age of ninety-two. At the time of his death Mr. Dodds was living in retirement at Bristol. A native of Scotland, he came south, and was engaged many years ago as under gardener to Col. Baker of Salisbury, and after a few years he became head gardener, and was in the service of his employer for the space of thirty years. As a cultivator and exhibitor Mr. Dodds had few equals, and in his day he gained a large number of prizes. On leaving Salisbury he took charge of the gardens and grounds of Ashton Court, Bristol, the residence of Sir Greville Smythe, and finally retired into private life. To the last he retained his interest in the Dahlia, and until prevented by growing infirmities he made a practice of coming to London to act as one of the censors at the annual exhibition of the National Dahlia Society at the Crystal Palace. Mr. Henry Eckford of Wem was at one time under Mr. Dodds when gardener to Col. Baker.

Société Française d'Horticulture de Londres.—We are informed that this admirable society will hold its annual dinner at the Imperial Restaurant, Strand, on January 12th, 1901. Mons. Louis Gentil, who was for some time secretary of the society, will preside.

Brixton Horticultural Society.—We learn that Mr. William Roupell is about to resign his position as honorary secretary of this society. An appeal is being made to those who are interested in horticulture in the district to assist in contributing to a testimonial to be presented to Mr. Roupell for his services. N. N. Sherwood, Esq., Dunedin, Streatham Hill, S.W., in acting as treasurer.

Shirley Mutual Improvement Association.—This society, with its affiliations in the neighbourhood of Southampton, will continue the winter meetings during the next three months. Upon January 21st Rev. H. Gorham, of Shirley Warren, will lecture upon "Insects Injurious to Garden Plants and Fruit Trees," and a prize, given by Mr. Shirwell, will be awarded for the best collection of six vegetables. Upon February 18th "The Cultivation of Potatoes" will receive unexceptionable treatment from Mr. A. Dean, a noted expert in that line for a generation, and five certificates adjudged for exhibits of Primulas and Cyclamens. With this meeting the lectures for the session conclude.

Beckenham Horticultural Society.—On Friday evening, the 21st, the members and friends of the Beckenham Horticultural Society assembled in the Public Hall to receive a lecture from Mr. Gregory, the secretary of the Croydon society, on "Walks and Talks in Kew Gardens," illustrated by limelight. The attendance was not all that could be desired, probably owing to the nearness of the festive season. That the absentees lost a great treat is certain, for the lecturer, who is an old Kewite, had in addition to the pictures thrown upon the screen a large number of photographs on view at the opening and close of the lecture, all being of his own manipulation. A hearty vote of thanks was accorded Mr. Gregory, on the proposition of Dr. Stillwell, the hon. sec., supported by Messrs. Burge and Webster, who, in acknowledging the same, gave a humorous account of his early days at Kew. Mr. Thornton, F.R.H.S., kindly supplied and manipulated the limelight.—T. C.

Bristol Gardeners' Association.—A public entertainment took the place of the usual meeting at St. John's Parish Room, Redland, on Friday, 28th, 1900. The chair was taken by Mr. G. Brook in the absence, through military duties, of the president of the association, Colonel H. Cary-Batten. An interesting programme had been arranged, which was efficiently rendered. Songs were sung by the Misses L. Paul and G. Bishop and Mr. H. S. Newbery, "Queen of the Earth" by Miss Paul, and "Jessamy Town" by Miss Bishop gaining well-merited encores, which were kindly responded to. Mr. H. W. Cadway skilfully played a violin solo and Mr. J. Bishop a banjo solo, which also was encored. The duties of accompanist were ably carried out by Mr. A. J. Wakefield, who gave in addition a pianoforte solo. The last part of the entertainment consisted of an exhibition of animated photographs. The subjects were varied in their character, including "Ox Wagons Treking Across the Veldt," "Ambulance Corps at work at Modder River," "Return of the C.I.V.'s to London," all of which proved entertaining, and were much appreciated. Prizes offered by Mr. Cary-Batten for three plants in flower attracted keen competition, the awards being:—First, Mr. Binfield; second, Mr. McCulloch; third, Mr. Ross.

A Plea for the Dumb Creation.—I have, says Mr. W. J. Stillman, in "Nature Notes," a hedge of Blackberries on one side of my ground, and one of Raspberries on another, and all this summer I have had no interference with the fruit, though there is no other in the immediate vicinity, and we have many blackbirds and thrushes, which we encourage in every way. But I have on the grounds vessels of water kept always supplied, to which birds and squirrels may come to quench their thirst. I am certain that none of the berries have been taken. Winter fruits are often eaten only for the seeds in them, but the pulp of Raspberries is evidently no attraction to the birds except for the juice. The same holds good for squirrels. Give them water in convenient places, and they will not take the trouble to get at the sap of the Pine trees. Many squirrels visit our wood, where are trees of many kinds, but not a twig has been touched since I began to lure the squirrels to visit us. If the great Scotch lairds who complain of the squirrels for scotching their trees would provide that a vessel of water was kept always accessible to them in the plantation, there would be no harm done to the trees (though, to tell the truth, I have never found any done), and it would cost them less than shooting the squirrels.

Gardening Appointment.—Mr. J. Sweeney, formerly of Leopardstown Park, Stillorgan, has been appointed head gardener to Mrs. Moore, Ashtown, Phoenix Park, Co. Dublin, in place of Mr. Kearns.

Mr. William Herbert Dunnett, a partner in the well-known seed house of Messrs. James Carter & Co., of High Holborn, London, died at his residence, Stonrhouse, Dedham, Essex, on Saturday, in his seventy-fourth year. Mr. Dunnett had ceased to take any active share in the management of the London business for many years. He was a large landowner in the Vale of Dedham. He leaves a widow, one son, and two daughters.

Poison in Artichokes.—From observations of symptoms of poisoning after eating boiled Artichokes, German scientists have found that a poisonous bacillus vegetates on the Artichoke, and this gives it the peculiar bluish colour. It is recommended that Artichokes should be consumed immediately after being boiled, and no portion reserved for future consumption. Artichokes which have become quite blue should not be partaken of at all. The symptoms produced by this poisonous bacillus is something in the nature of cramp or a choleraic attack, attended by violent retching.

Caryota urens.—This Cingalese stove Palm, apart from its utility as a stove plant, has become an article of commercial importance. In its native haunts a series of fine fibres has been noticed encircling the stem and bases of the leaves, and when graded and dipped in a solution of linseed oil the fibres assume a dark, dusky brown colour, and are softer than the fibres from Attalea funifera, a Brazilian Palm, and commercially known as Piassava Piassaba. The newer product is termed kitove, the finest fibres of which have been converted into stuffing for cushions, thereby displacing hair, which hitherto served for this purpose.

The Banana as a Moral Evil.—According to the report of Sir H. Johnston, we may congratulate ourselves upon the fact that the Banana does not grow in England. The idleness and the vacuity of the lives of the natives in Uganda are, according to him, entirely due to this plant. It practically grows itself, and once it is planted no trouble need be taken about it whatever. The tree grows up, bears a couple of bunches of fruit, and dies down again in rather less than a year. However, it throws shoot after shoot from an underground rhizome, and these in their turn grow up into trees and bear fruit. A Banana tree planted seems to go on for ever, and the only thing its grower has to do is to pick the fruit.

A Botanic Garden for the Seychelles.—Mr. Chamberlain has given his sanction to the establishment of a botanic garden in the Seychelles, which, with the co-operation of the director of Kew Gardens, was to be started on the first day of the present century. Some people have actually assigned the site of the Garden of Eden to the well-known Adalbra group in the Indian Ocean. Every description of plant which is likely to be of the slightest economic value will be obtained from other countries, and the treatment of the soil will be made the subject of special experiments. The islands are in direct communication by steamer with Colombo, Mauritius, Aden, Zanzibar, and Bombay, a factor which is likely to play an important part in the development of their internal resources.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1900.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
December.		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
Sunday .. 23	N.N.E.	deg. 33.8	deg. 33.5	deg. 37.0	deg. 30.3	ins. —	deg. 42.2	deg. 46.3	deg. 49.0	deg. 24.6
Monday .. 24	W.S.W.	34.2	33.3	50.2	30.1	—	41.8	45.6	48.9	27.5
Tuesday 25	S.S.W.	49.8	48.8	52.6	34.3	0.08	42.7	45.3	48.7	30.0
Wed'sday 26	S. S. W.	48.8	48.0	51.3	47.2	0.18	45.0	45.7	48.5	40.6
Thursday 27	S.S.E.	48.1	47.1	54.0	41.7	0.07	45.0	46.2	48.5	30.3
Friday .. 28	S.W.	46.7	41.7	47.2	46.1	0.09	45.9	46.4	48.3	40.6
Saturday 29	S.S.W.	37.0	36.9	45.6	36.7	—	43.7	46.4	48.3	27.5
MEANS ..		42.6	41.3	48.3	38.1	Total 0.42	43.8	46.0	48.6	31.6

The temperature continues abnormally high for this time of the year. The first two days of the week were very foggy, followed by rain on the four succeeding days, and a heavy gale on the 28th.



Feeding Chrysanthemums.

WHAT next! "A. D." teaching growers of large blooms of Chrysanthemums how to feed their plants! There seems to be no limit to the knowledge acquired by some persons. "A. D." says "some well-decayed old hotbed manure." I would ask, What virtue is contained in well-decayed old hotbed manure? How much ammonia or other plant food does it contain? Such manure is the shell which did contain a stimulant, but not when thoroughly decayed. Ah! well; such is the teaching of those who profess to be well acquainted with not only all branches of horticulture, but the details as well.—*NOUS VERRONS.*

An Appreciative Grumble.

WHEN we find our Journal cut for us, and that we require no longer the frequently evasive paper knife; when we again find our wishes anticipated in the reduction of the price of priceless weekly wisdom, and are pocketing 33½ per cent. of former cost, may we not hope, while not ungrateful for benefits received, for further progress on the road to perfection, and allow it to be known that ardent readers liberally mark and annotate their Journal regularly in the most inconsiderate fashion, and scribble on tops of outside pages, the numbers of such pages inside referring to articles of prominent interest, with their purport sharply indicated, and varying from sometimes only two or three to more than six weekly? Why, I ask, should tables of contents be hidden away under any consideration where nobody suspects them, and fail to appear on the first page in the first column, where scorings may be made with impunity and neatly and be visible at the first glance in handling back numbers, to the great advantage of systematic dealings with multifarious contents? Other enthusiasts may share these sentiments and be equally grateful for another instalment in the Journal's evolution and for a consideration of their little sorrows.—*H. H. R., Sidcup.*

Women as Gardeners.

I AM afraid I have somewhat hurt the pride of at least one of the lady gardeners. I can assure Miss E. Welthin Winlo that I had no intention of doing so when I wrote my letter (page 513), but wrote more in sympathy than in a spirit of ridicule. I was led to state what I thought were the facts about digging, and rather than suggesting that the lady gardeners should become garden labourers I tried to show how the fair sex was unfitted for the heavier work connected with our profession, and through which we men have had to plod as we have worked our way along. There may be a few Amazons capable of using the spade, but the majority—no. I am glad Miss Welthin Winlo does not expect to be an expert in two years; the theory of gardening is much easier learnt than the practice, which is, after all, the more important. A person at one of the colleges may become quite perfect in botany or the physiology of plants, and be worth very little as a gardener.

I fear the ladies are somewhat confused as to the tone and intent of the few letters that have appeared in the press about them. Miss E. Welthin Winlo thanks "A. D. C." for his tribute to women's work, whereas the lady at Kew, "E. M. G.," does not approve; so I suppose we may say "many women have many minds." I do not quite see how your correspondent should be so indignant at my recommending domestic service as a more fitting occupation for women, and neither do I see why an educated servant should not command a better position and higher wages than an uneducated one; there are many good openings in large establishments for women that are far above the remuneration given to the gardener. I would further remind the lady gardener that from the day she enters the ranks of gentlemen's gardeners she becomes a domestic servant, only that being a woman instead of a man her employer will not be called upon to pay a tax of 15s. a year, which will be at least one saving in the garden expenses.

In conclusion, just let me say that fads and fancies do not often survive long, and I hope this is not among that class. My experience of employers of gardeners is this, that the men, or women, who are wanted are those who can do the most work, produce the utmost from the garden at the least possible cost. These are facts that the women must face, and my wish is that after they have fitted themselves for a post the remuneration and position they will hold will not be a disappointment to them. The premiums or the saintly millionaire will make the hostel or the college a success, but it is the afterwards that I fear for those who have to depend upon themselves for their livelihood.—*JOHN KITLEY.*

Spade v. Fork.

DURING twenty years' residence in the extensive market garden area of West Middlesex I rarely saw a spade used except for making trenches and earthing Celery. The long, flat-tined steel fork is there the common tool for digging, and for nearly all soils it is very difficult to beat. I have never met with soil in which it could not be used as readily as the spade. Half-worn spades are of little use, but flat-tined forks may be used for shallow forking, or pointing till quite short; then they can be relaid or lengthened again. Whilst I like these flat-tined forks so much, I dislike the narrow-tined ones, as not only do they readily snap in stony soils but with loose soils fail to lift the pulverised matter. The others will do such work well, and with stiff soils they break the spits better than a spade. For trenching, and especially in breaking up a hard bottom, they are most useful. I am surprised to learn that anyone should prefer to dig Potatoes with a spade rather than with a fork. Where the tubers are small the narrow-tined fork may not be useful, but one with flat tines will do its work capitally, throwing out the tubers well on to the surface and free from soil.—*EXPERIENTIA DOCT.*

Apples.

I AGREE with "N. H. P." (page 572), that if the list of Apples was shortened the public would not be any the worse; at the same time every grower of Apples has the remedy in his own hands—leave those sorts which he considers useless to his purpose. It is surprising, though, how the success of certain varieties varies in different localities. In this way a wide range to select from is a boon. I have many times wondered who certain Apples were included in any list, and perhaps before long I have seen these self same sorts either growing or being shown in magnificent condition in another part of the county. Take, for example, Emperor Alexander, Cellini, Stone's, and even Potts' Seedling, are quite useless here. Neither of them, in spite of much attention to the roots and branch, have ever been a success with me. The former will not crop, the second is poor in growth, while the others are too prone to canker to be worth the space they occupy. Again, variety provides fruit to study and compare in varied seasons, as seldom do we get two springs alike, summer, or autumn either. A person with a space to cultivate a large collection is conferring a boon on his immediate neighbourhood by the testing of sorts which are likely to flourish in that particular soil. In this capacity it is not the great variety that is beneficial, but the quantity of fruit that is required in the neighbourhood. There is hardly a locality but has a specialty in the varieties of Apples that grow well, crop correspondingly, and sell at a good price. To the market man it is not the great variety that is wanted, it is to know the requirements and cater for them in bulk. To the amateur or cottager these long lists are confusing, but seldom do such persons plant Apple trees without consulting their neighbours as to what is the best suited for the locality.—*E. M.*

Late Grapes.

I WAS pleased to see Mr. Easter's interesting remarks on this subject (page 581), and trust that other cultivators will also give their experience in regard to the peculiarities of the several varieties. I quite agree with Mr. Easter in regard to the good qualities of Mrs. Pince as a late Grape, and have little doubt that improved methods of culture will be gradually brought to light. My experience of it has always been that it requires a well drained border, and a little more heat during the growing season than any other varieties. The berries ought to be fully ripe by the end of September, and then a change of procedure is necessary. With cool treatment the Grapes may be kept quite fresh and plump for a long time; indeed I think that one of the greatest mistakes made in the management of Mrs. Pince is to attempt to ripen it by the aid of a considerable amount of fire heat during the autumn. The result is shrivelling of the berries. This particular variety does not often suffer through damp in autumn, and although it is not wise to keep the soil in the borders very wet, I am convinced they are often allowed to get too dry, a condition which favours shrivelling.

I have tried many experiments in regard to the amount of fire heat necessary to keep Grapes in good condition on the Vines till Christmas, and have come to the conclusion that as a rule we give more fire heat than is necessary for nearly all varieties except Gros Colman, which by reason of its thin skin quickly decays in a low temperature. Mr. Easter has also, I see, brought to the light of publicity two old varieties which I purposely omitted from my list—viz., Black Prince and West's St. Peter's. Both were grown in a collection of which I had charge many years ago. The former produced long tapering bunches freely, and the berries always coloured splendidly, but I think little more can be said in favour of Black Prince. It is princely only in regard to colour and length of bunch; the bunches are too thin and narrow, and the flavour of the berries scarcely second rate. West's St. Peter's, on the other hand, is of fine quality, the bunches compact, of fair size, and the skin thin; the berries are, however, rather undersized, and this is probably the reason why the variety is so little grown.—*H. D.*

The Old Century—The New.

THE truly wonderful nineteenth century, with all its changes, progress, fierce conflicts, commercial enterprise, and educational advance, has at last run its course, and will doubtless in the future be "writ large" in the history of the human race. Centuries, however, may pass away, but the interest in gardening—the most ancient of all arts—still remains to brighten up the lives of all classes in their onward struggles through the turmoil of life.

But although the gardening instinct remains, it has been pursued under widely different circumstances during the progress of the "dead century." Cheap glass and improved methods of heating have, perhaps, done more than anything else to revolutionise and popularise horticulture. In the early part of the century—as far as we can gather from old books—gardening consisted principally of growing vegetables and fruits in the open air, keeping lawns and walks trim in appearance, forcing vegetables with heat generated by fermenting materials, and struggling hard to grow good plants and fruits in houses having much woodwork, small squares of glass, and brick flues as a medium of supplying heat. Glass structures were then appendages which only important gardens possessed. In those days much labour was undoubtedly spent on gardening in the open air, but labour was cheap, and horticulture was certainly not an expensive hobby. The discovery of a suitable method of heating by hot water soon had the effect of stimulating the erection of glass houses, for up to that time, notwithstanding the dearness of glass and clumsy methods of building, the heating problem was undoubtedly the difficulty which prevented the erection of houses on a large scale. When this problem was solved the culture of tropical plants rapidly extended, as the great difficulty of preserving them throughout the winter became a thing of the past.

Good Times and Bad Times.

Times were prosperous for the great landowners in those far off days. They lavished their wealth upon their gardens, princely places sprang up in various parts of the country, and the gardens were looked upon as a means of interesting guests, as well as for the purpose of supplying the mansion with flowers, fruits, and vegetables throughout the year. With the increase of glass houses the system of employing greenhouse plants to brighten up the flower garden in summer gradually found favour, and was soon carried to such extremes that a reaction set in. In the meantime, although glass had been so largely used, improved methods of manufacture quickly cheapened it, and the commercial instinct of a few shrewd Britons saw that it could be turned to advantage. The advent of the market grower had a quickening influence on private gardeners and nurserymen who had hitherto been the only producers of choice plants and crops grown under glass. The time soon came when the professional man and tradesman could buy in the markets a type of produce which could previously be obtained only by the wealthy. Bad times began to affect the landowners; labour and other expenses in gardens had to be cut down to the lowest point, and many grand old gardens became regarded simply as so much space from which to extract as much produce as possible for the supply of the mansion, and the markets—their glory then departed.

A Brighter Picture.

But there is a brighter side to the picture. Although many large old gardens fell from their high estate, great numbers of smaller ones were springing up all over the country. The successful merchant having an inclination for the "grand old art," formed his garden on commercial lines, not too large to make a great show for a time, and then find its maintenance beyond the scope of the purse. The tradesman, the artisan, and even the labourer in many instances have their glass houses to-day, and good use they make of them too; thus we find that although in some respects gardening has suffered during the past quarter of a century, it has advanced greatly in others, and the volume of good gardening to be seen in Britain to-day is greater than at any other period of its history. It is also pleasant to record the fact that whole pages of the *Journal of Horticulture* might be filled with the marvellous progress made in some directions in the horticultural world, but I have only attempted to deal briefly with the evolution which has been brought about in some respects.

The work of the future lies before us, and in the opening year of this new century let us all press onward in the mighty work of advancing a still further stage the progress of an art in which there can be no finality. The difficulties of the future may perchance loom up as a mountain before us, but persistent endeavour, like the trickling water, will wear away the hardest rocks; and who can tell what new forces may be brought to our aid by the light of scientific research, or how great may be the prosperity of the century on whose threshold we have just entered?—ONWARD.

The Yew.

IN our issue of December 13th last, when speaking of "The Manual of Coniferae,"* we had occasion to comment upon the especial excellence of the historical notes. Owing to the kindness of Messrs. James Veitch & Sons, we are now in a position to reproduce the following interesting article upon the Yew, together with the two accompanying curious illustrations.

A Native Tree.

The Yew in one or other of its numerous protean forms is seen everywhere throughout Great Britain, but almost everywhere planted by the hand of man, so numerous and so useful are the purposes for which it is required. The Yew also grows wild in this country, as everyone knows, and trees that have sprung up spontaneously are to be seen in most of the hilly districts, and also in the copses and hedgerows in the plains, especially on the chalk formation, but they are relatively few in number not only to what they were in Saxon and Norman times, but also to those that have been raised and planted by human agency; indeed, it is not exceeding the truth to affirm that for every hundred seedling Yews that spring up spontaneously, many thousands are raised by the forester and nurseryman. Many causes have contributed to the extermination of the Yew in the wild state, amongst which the clearing of the land for cultivation and the long and continuous demand for the wood for Yew bows and the better kinds of household furniture have been the most potential. On the chalk downs of Surrey and Sussex, where the Yew occurs wild in considerable numbers, it is sometimes seen solitary, forming a conspicuous object from afar; occasionally it occurs in scattered groups, in places forming small groves unmixed with other trees.

A Sacred Tree.

The association of the Yew with religion and places of worship is of very ancient date. Yew boughs were formerly carried in procession on Palm Sunday, and in parts of Ireland Yew trees are sometimes called Palms; it is still the custom for the peasants to wear in their hats or buttonholes sprays of Yew from Palm Sunday until Easter Day. Many hypotheses have been brought forward explanatory of the cause of the selection of this tree for planting in proximity to churches and abbeys, or, perhaps, it would be more correct to say, the building of churches and abbeys in proximity to large and full grown Yews; for it is indisputable that the finest and most venerable trees at present existing in Britain are to be found in churchyards and in the vicinity of old priories and abbeys, but it is by no means certain whether in all cases, or even in the majority of them, the Yews were planted subsequent to the building of the edifice, or the edifice erected near the spot where the Yews were already standing. The true cause of the association, in this country at least, is not, we think, difficult to be found—this is in the character and habit of the tree itself. There is no other native evergreen tree at all to be compared with the Yew as regards its foliage, its massive sombre aspect, and its longevity, and hence the Yew would be naturally selected to represent the feelings, the sentiments, and the hopes associated with burial grounds and in connection with places of worship where sentiments and feelings are most likely to seek expression by visible representatives or enduring monuments. The feeling of Hope lives in its evergreen foliage; Sorrow is remembered in its dark and sombre shade, and Veneration is awakened in its aged aspect. It may be safely assumed from the known antiquity of many Yews still standing in churchyards and the like places, that the association of the Yew with religion must be of very ancient origin; and the probability is very great that it took its rise at an epoch anterior to the introduction of Christianity into Britain.

The Yew in War.

In a much wider bearing the Yew played a prominent part in our early history as supplying the wood of which the bows of the archers were made, and on that account it was the subject of many statutes of our early kings, and afterwards of Parliament up to the time of Elizabeth, which made provision for the preservation and planting of Yews for the supply of Yew-wood, regulating the export and import of it, &c., so great had been the destruction of the trees in England during Norman and Plantagenet times. Every student of English history can point to great events in which the Yew bow played a foremost part. It was essentially the Saxon weapon both for warfare and the chase; and during the early part of the Norman supremacy was often used with deadly effect by the oppressed natives to rid themselves of their tyrannical masters. Deeds of daring were performed, attesting the extraordinary prowess and skill of the Saxon archers; deeds that were long kept in remembrance by tradition, celebrated in song and verse, or preserved in legends which afterwards supplied subjects for modern romance. The Yew bow was fatal to several English kings, to Harold at Hastings, to William Rufus in the New Forest, and to Richard Cœur de Lion at Chaloux, in France. It was the skill of the English archers that enabled Henry II. to gain a

* "Veitch's Manual of Coniferae," published by Messrs. James Veitch and Sons, Royal Exotic Nursery, King's Road, Chelsea, London.

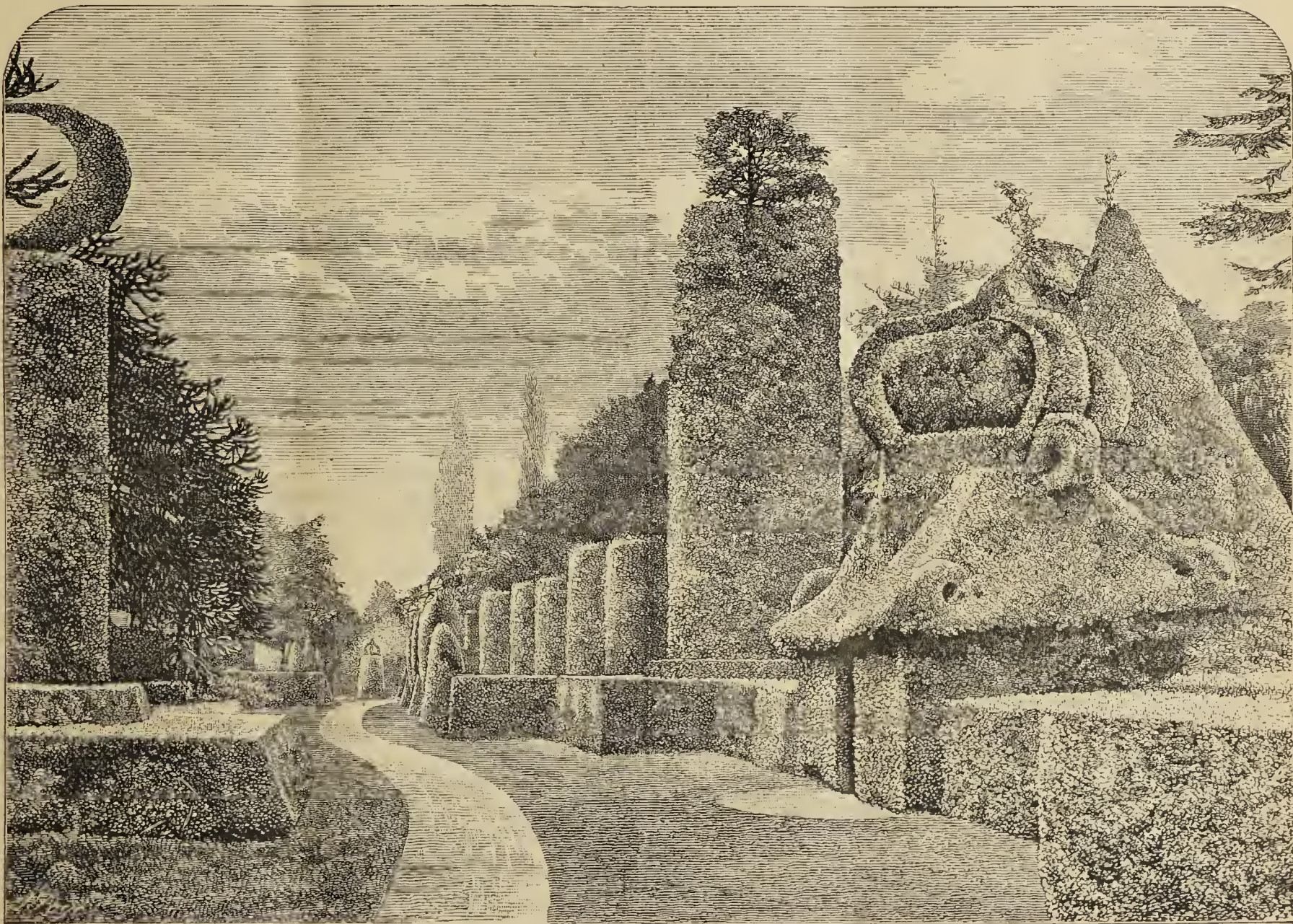
footing in Ireland, and the name of Strongbow, borne by the leader of the expedition, attests the high repute in which the weapon was held. Cressy, Poitiers, and Agincourt were won chiefly by the Yew bow; it was the most popular weapon through the long civil strife between the rival houses of York and Lancaster; and both in warfare as well as in the chase it was held in estimation long after the invention of gunpowder had prepared the way to a complete change in the system and science of war.

The Yew in Gardens.

The association of the Yew with gardening in England began early in the sixteenth century. It was brought into prominent notice towards the end of the century by Evelyn, who claims the "merit" of being the first to introduce the fashion of clipping it into artificial shapes which became general during the next century. It was first used in the formation of hedges for purposes of utility, but the dense growth it assumes when pruned, its apparently unlimited duration, and the

were originally cut and trimmed. Some of the most remarkable of these are to be seen at Levens Hall, Westmoreland, where the topiary foible of our horticultural predecessors is still maintained in all its quaint antagonism to Nature.

Not less striking but more modern, and, if we may use the expression, more rational, is the topiary work at Elvaston Castle, near Derby, the seat of the Earl of Harrington. A large portion of this consists of ornamental hedges of the common Yew, either dividing parts of the grounds from each other, or enclosing spaces devoted to special subjects; and of single specimens, both of the common Yew and its golden variety, cut into conical pyramids of uniform size and height, and of such there are upwards of 1000. There are comparatively few representations of birds and animals; the bolder work represents the walls and bastions of a Norman castle, archways, alcoves, arbours, &c. The great extent of the topiary work at Elvaston is calculated to excite surprise rather than admiration, at the same time its extreme formality is greatly relieved by the noble Conifers of the Fir and Pine tribe which have been planted



TOPIARY WORK AT ELVASTON CASTLE, NEAR DERBY.

readiness with which it may be cut into many shapes without impairing its vitality, soon led to its being extensively used in topiary work, which had been previously confined chiefly to the Box and Juniper. The dark, dense foliage of the Yew, and its more robust and taller growth than the Box or Juniper, offered facilities for the introduction into gardens, by artificial means, of many varieties of form, and the fashion of clipping Yews into geometric figures, and also into the figures of birds, beasts, and even the human shape, became for a time a very prevalent practice, which reached its height towards the close of the seventeenth and during the early part of the eighteenth century. The popularity of the Yew as an ornamental garden plant during this period may be partly accounted for by the paucity of evergreen trees and shrubs at that time available, and the desire for variety created by the taste for gardening which began to be general among all classes. The practice gradually fell into disuse as the introduction of exotic hardy trees and shrubs became more frequent, and supplied a more natural and pleasing variety than the uncouth figures which one kind of tree was made to take, but into which Nature never intended it to grow. Many evidences of the old topiary work are still to be met with, and not a few old Yews are made to retain the figures into which they

beside and around it with no sparing hand, and by the beautiful view afforded by the river Derwent, in its winding course through the grounds.

Avenues of Yews.

Avenues of Yew trees were formed as early as the Stuart period and more frequently in the early Hanoverian times; but the comparatively slow growth of the trees and especially the dark and gloomy aspect produced by them when full grown and standing in close proximity to each other, caused the planting of Yew avenues to fall into disuse. Among the most noteworthy still remaining are those of Cleish Castle in Kinross, Candover, near Alresford, Overton-on-Dee, near Ellesmere, and Aberglasney, in Carnarvonshire. In Ireland, where the humidity of the climate induces a more rapid growth and a more verdant aspect of the foliage, Yew avenues are scarcely so sombre as in Great Britain. Mention may be made of those at Glencormas, near Bray; Oldcastle, in co. Meath; Clonfert, in King's County; and in the Royal Botanic Gardens at Glasnevin. At Dunganstown, in co. Wicklow, is a row or colonnade of Yew trees remarkable for uniformity of growth so unusual in the Yew, and the consequent impressive effect produced by it. The trees, fifteen in number, have undivided trunks for 20 feet of their height.



Destroying Weeds and Insects in Soil.—The baking or steaming of potting soil prior to its use, for the purpose of destroying the seeds of weeds and to kill the insects and eggs of insects that may be contained therein, has been practised to some extent of late years, and with a considerable degree of success. A well-known and successful Philadelphia plantsman has, says an American journal, contrived a box for this purpose, the bottom of which is fitted with steam pipes. Such an apparatus is a great convenience, though not a necessity, and should be used with judgment, for, in the opinion of some growers, good soil, if cooked, should preferably be a trifle "raw" rather than overdone.

Expansion of Trees.—Much error is diffused by the use of improper terms. An American work on forestry, referring to attachment of labels or guards to trees, remarks that "it should be by copper wire, which stretches as the tree expands." But, says Mr. Meehan, there is no expansion of a tree in a physical sense. A wave flows over the sand by the seashore, but not by expansion of the waters. In like manner the new wood of trees flows over the older wood, but this is not expansion. If the wire attachment to a label be loosely over a horizontal branch, and yet so firmly that it will not be disturbed by the wind, the wire will be covered by the new growth, though there be plenty of room in the wire loop for expansion.

The Hygiene of Grapes.—Recent testimony as to the hygiene of fruit places Grapes high up in the list. For certain diseases, says a contemporary, they are specific, and the "Grape cures" of France and other countries have a deservedly high reputation. Grape sugar is more easily digestible than cane sugar. The fruit acids are beneficial in rheumatism, and as a preventive of certain injurious deposits in the system, especially of old people. The Americans, the largest consumers in the world per capita of sugar, ought naturally to be large consumers of fruit. Ripe, fresh fruit, or some form of cured, canned, or preserved fruit, should, both by the logic of economy and health, form a regular portion of every meal of every family.

A Rival of the Potato.—A successor to the Potato! so writes Mons. P. Hariot in our Parisian contemporary "Le Jardin," referring to a plant belonging to the same order as the precious tuber. The *Solanum Commersoni*, says M. Hariot, has been cried up as destined to replace the Potato in a time more or less distant. Introduced into Uruguay a few years back by the Consul of the South American Republic at Marseilles, the *Solanum* flourishes on the banks of rivers; it is then semi-aquatic, and can maintain itself well in humid and well irrigated places. It is this which renders its cultivation particularly interesting. In its general characteristics it resembles the common Potato. Its tubers average about 2½ ozs. in weight. The form of these latter is elongated; their surface wrinkled. The taste is first bitter and afterwards sweet. It is probable that cultivation will improve its qualities greatly, and that with this plant will happen what took place in the case of the Potato. Its propagation is effected by stolons.

Notes on Pines.—There is no Pine Apple so fresh and pleasing in appearance as British grown. The fruit, however, does not always come at the desired time, hence it is sometimes necessary to bring together any plants for the purpose of inducing them to come into fruit sooner than they otherwise would, providing a light house or pit where they can have the benefit of more heat. This being done, and the heat up in the beds, some of the most promising must be selected from the successional plants, choosing those having high centres and are quite stout at the upper part of the plant stem. Let these be plunged in a bed, which should stand constantly at a temperature of 90° to 95° at the base of the pots. If the plants are in the least dry water them copiously with weak liquid manure at the same temperature as the bed. Maintain the top heat at 65° to 70° at night, with 5° more from fire heat by day, and 85° to 90° from sun heat. Keep the atmosphere about the plants in a genial and invigorating condition by damping the paths and walks as they become dry, syringing as may be necessary. Neither the damping down nor the watering should be overdone, as too much air moisture induces a plethora of leaves and a sodden soil destroys the roots.—PRACTICE.

A Plea for the Beech.—No true knowledge of the beauty and magnitude of the Beech can be possessed by anyone until he has seen some of the pure woods in the Beech districts. Here the trees attain great girth and height, and an effect seldom seen elsewhere. In some of these woods the trees stand like huge columns—50, 60, and more feet in height, often without a branch. The Beech re-germinates freely, and many of our most beautiful areas are of natural growth; and it is in these areas where the finest timber is found.—("Farmers' Gazette.")

A Variegated Palm.—Variegation is, says "Indian Gardening," a very rare quality among Palms, and it is this quality that makes a variegated "sport" of *Livistona rotundifolia*, raised from seed in the gardens of the Agri-Horticultural Society of India, worthy of note. The two first leaves are striped green and creamy white longitudinally but it remains to be seen whether the later leaves will develop this variegation. If they do, then we have a very rare plant indeed in this Palm seedling. We shall watch its progress with interest.

Artificial Light in Forcing Vegetables.—The importance of artificial light in forcing practice has been established for some time, and within the last few years the economic side has received much attention. The appearance of calcium carbide as a commercial commodity has, says a writer in a trans-atlantic journal, given a new and comparatively cheap source of light. The chemical and physical properties of the acetylene gas resulting from the calcium carbide, differing much from those of the other lights in use thus far, has led to the investigation of this new light at the Cornell Experimental Station. It is claimed that the spectrum is the same as of the sun.

Basic Slag and Finger-and-Toe.—Last year I had a number of experimental plots in connection with the Durham College of Science in order to determine whether it is better to sow manure broadcast on the surface or in the centre of the drills, but owing to 90 per cent. of the roots going off by "finger-and-toe" the results were practically useless. Out of their failure, however, a very interesting fact was disclosed. The plots occupied about one acre in the middle of a large field which contained soil of very uniform condition and all equally worked. All the manures tried consisted of superphosphate and ammonia along with farmyard manure. As already stated, all the experimental plots were simply cleaned by "finger-and-toe," as well as the unmanured plots. On the remainder of the field there was a fair crop of roots, with "finger-and-toe" possibly to the extent of from 5 to 10 per cent., which did not affect the crop appreciably. This phenomenon proves, not that the experimental plots suffered because of something which had been applied, although the dose of superphosphate might do some injury, but because of something which was withheld. The unmanured plot proves this; No slag was used on the plots, nor, of course, on the unmanured plot; whilst the remainder of the field received 3 cwt. of basic slag per acre. The natural inference is that the basic slag arrested the "finger-and-toe" on land predisposed to the disease. If this conclusion is not sound, I am unable to account for the peculiar phenomenon.—J. P. BELL (in "Agricultural Gazette.")

Approximate Time for Certain Varieties of Seed to Germinate.—The time for seeds to germinate depends entirely upon the weather and the treatment of the seed bed. We will try, though, says a writer in the Journal of the Jamaica Agricultural Society, to give as much as we know by experience, the approximate time for germinating. Artichokes from fourteen to twenty-one days; Asparagus from twenty to thirty days; Beans from five to ten days; Beets from ten to twenty days; Broccoli, Brussels Sprouts, Cabbage, and Cauliflower from five to twelve days; Carrots from fourteen to twenty-one days, and often longer during dry weather; Celery from fourteen to twenty days; Corn from eight to fourteen days; Cress, curled, from three to five days; Cress, broad-leaved, from five to thirteen days; Cress, Water, from twelve to fourteen days; Cucumbers from five to ten days; Egg Plants from eight to twenty days; Endive from three to seven days; Kohl Rabi from five to twelve days; Lettuce from three to five days; Melons from five to ten days; Mustard from three to seven days; Onions from seven to fourteen days; Parsley from twenty to thirty days; Parsnip from eight to fourteen days; Peas from five to ten days; Pepper from eight to twenty days; Pumpkin from five to ten days; Radish from three to five days; Salsafy from eight to fourteen days; Sorrel from eight to fourteen days; Spinach from eight to fourteen days; Squash from five to ten days; Tomatoes from five to fifteen days; Turnips from three to five days.

Figs under Glass.

THE terminal buds of trees in pots started in December having swollen, advantage should be taken of any mild weather that may prevail for increasing the mean temperature of the house, as when Figs are fairly started into growth they delight in a good heat, plenty of moisture, and all the light that can possibly be given them. Admit air so as to prevent the glass being constantly covered with moisture.

Maintain a night temperature of 55° to 60°, ventilate a little at 70°, losing no opportunity of admitting a little air when the morning promises an increase from gleams of sun, and close sufficiently early for the temperature to run up to 80°. Syringe the trees and damp the floors and walls twice on fine days, morning and early afternoon, but

by bringing the trees on slowly, seeking advancement from sun heat rather than artificial in dull weather. Apply water to the border not less warm than the mean of the house, bringing the soil into a thoroughly moist, but not saturated condition. Syringe twice a day with tepid water a little warmer than the house, but in dull weather damp the floor and border only, always syringing sufficiently early to allow the trees to become dry, or nearly so, before nightfall.

Succession Houses.

Proceed with pruning as convenient, thinning the wood where crowded, cutting back that which has reached the extremity of the trellis to growth well disposed for supplanting the branches cut away in bearing. Thoroughly cleanse the house, limewash the walls, wash the trees with carbolic or petroleum soapy water, using a brush; if the trees have been infested with scale or red spider, employ the



TOPIARY WORK AT ELVASTON CASTLE—THE YEW GARDEN. (See page 13.)

when the weather is dull and wet omit the latter and damp the floors in the evening instead of syringing the trees, as these are weakened and the foliage made soft by keeping them wet during the night, therefore always allow the trees to become fairly dry before nightfall. Be careful not to allow the heat about the pots to exceed 70° to 75°, and if the materials are heating too violently turn them as a means of reducing the bottom heat, which, however, ought to be kept steady.

Early House of Planted-out Trees.

This is an excellent means of securing the finest Figs early in June, the roots being confined to narrow borders about one-third the width of the house, and the soil a calcareous loam on a stratum of limestone or sandstone, so as to insure perfect drainage with superfluous water carried off by a drain. The house should be started without delay, maintaining a night temperature of 50°, 55° by day, and 60° to 65° from sun heat. Trees that have been started about the same time for a number of years push growth with little excitement; but young trees that have not been forced start tardily, and are often given more heat in the early stages than is good for the crop. This should be avoided

solution at a strength of 4 ozs. to a gallon of water. It is necessary to dislodge the scale, effecting that by using a half-worn brush thoroughly cleansed from paint. Remove the loose surface soil or mulching, and supply fresh lumpy loam with sprinkling of approved fertiliser. Keep the house as cool and dry as possible, merely excluding frost, or not allowing the temperature to fall many degrees below freezing point.

Young Trees in Pots.

If these are wanted for early work another season the plants should be placed in gentle heat during this month, in order that they may make and properly ripen their growth by September. They must be potted without delay, using good turfy loam, rather strong, with a fourth of well-decayed cow manure and a fifth of old mortar rubbish, draining efficiently and potting firmly. Train the plants with a single stem, and allow the radiating branches to form the foundation of a good bush or pyramid. Insert cuttings or eyes of any varieties it is desired to increase, which in order to make growth quickly should be encouraged with bottom heat, and started not later than the beginning of February.—GROWER.



Suggestions for 1901.

I PURPOSE to offer a few suggestions to the compilers of show schedules, who, when drafting their prize lists for next season, should endeavour to introduce some change of class or method of dealing with those already existing. This is rendered very desirable by the fact that all visitors to horticultural exhibitions do not understand the individual quality of the blooms, but look for constant changes. Lacking the highly developed florist's eye their interest quickly wanes unless a constantly changing picture is provided. My suggestions will not, perhaps, contain anything very new, but will rather take the form of a record of experience of what appeared to me to be a success at the various shows visited.

Vase classes must play a prominent part in all shows, as the blooms can be so admirably displayed. The true decorative value of each variety can be appraised at once when arranged in vases. No matter how many blooms are placed in a vase they should consist of only one variety; a mixture is not nearly so effective. No other show with which I am familiar can compare with Edinburgh for the extent and variety of its vase classes; no less than twenty-one are included in the schedule. In some instances twelve blooms of any variety of Japanese are required in two vases, but I cannot say the effect produced by such classes is of the best. There is a lack of harmony in colour that is difficult to explain. Not so the various classes set apart for six blooms of specified varieties. For instance, Mutual Friend brought forth nine competitors, and a really charming display resulted, as the drooping florets make this variety peculiarly effective for this form of arrangement. Mons. Chenon de Léché is also excellent for this purpose. Especially handsome is the large vase class at the show of the National Chrysanthemum Society. Five blooms of one variety is a fairly large order, and the competition might be increased if fewer were demanded. Many societies offer prizes for twelve yellow and the same number of white flowered varieties. Why not stage these in two vases instead of adhering to the cup and tube principle?

What are known as decorative sorts should find a place in every schedule. If all societies cannot provide for three vases one would suffice. Single flowered varieties, too, ought to receive ample encouragement. Any kind of foliage must be allowed in the two last-named classes. At York as many as twelve varieties are required, these arranged in separate vases producing a capital effect. At Windsor a feature of the show is the class for a basket or vase of twelve Chrysanthemums arranged with other natural foliage, and this is a splendid means of illustrating the value of large blooms for hall or drawing-room decoration.

At Birmingham a class for displaying large blooms in conjunction with small foliage plants is provided. To fully explain the object of the class I cannot do better than quote the whole of it: "Twelve specimen blooms of Japanese Chrysanthemums, distinct, on long stems, arranged with any kind of foliage, which may include small Ferns and Palms in pots, provided the blooms are fully and artistically displayed. The object of this class is to illustrate tasteful arrangement of highly developed flowers of the best quality for decorative purposes. Each exhibitor will be allowed $3\frac{1}{2}$ feet \times 3 feet table space. The flowers must be exhibited in vases or vessels containing water and not exceeding 15 inches in height." The result was highly satisfactory, as many as ten growers competing.

Table decoration with Chrysanthemums plays an important part at many shows. There is no disputing the fact that this section might advantageously be increased at many shows. At Hull, as is generally well known, a room is specially set apart for this section of the exhibition, the exhibits being seen, as they should be, under artificial light. In the ordinary way table decoration is a leading feature at the Birmingham shows, no less than eleven competing in the principal class, and, as might be expected, a varied, interesting, and attractive display was made.

The inclusion of foliage plants, Palms, Ferns, and Crotons might be much more general in groups of Chrysanthemums than is at present the case. There is a too formal appearance about numbers of these exhibits, while the individual beauty of many varieties is frequently quite lost.

Combination classes of incurved and Japanese blooms are not as numerous as they were. I think such an arrangement lessens competition, but is a distinct advantage to the cultivator of the incurved varieties, as it sometimes enables him to take a leading position with inferior Japanese blooms.—E. MOLYNEUX.

Late Varieties.

In the able article on late varieties by "S.," page 565, last vol., mention is made that the once popular white L. Canning does not come so well as it did a few years ago, as it produces many flower "blind" buds. I wonder if your contributor has ever tried shaking the old stools out and repotting each year. As I pen this note, I have in my mind a house with nearly 200 plants in it that have been so treated each year, and I can assure "S." that they open as perfect as could be wished for, and for cutting in large quantities not many could equal them for Christmas decorations.—J. B.

Forcing Vegetables.

Rhubarb and Seakale.

MOST gardens contain strong clumps of Rhubarb and Seakale, and especially the former, some of which may be forced. Although such varieties of Rhubarb as Prince Albert and Johnston's St. Martin's are excellent for forcing, any of the later varieties will well repay the trouble taken. Even the Giant Victoria, though it does not start readily, can eventually be induced to form a great number of stalks, which are of very superior flavour. Roots of any variety of Rhubarb and Seakale may be lifted and packed in rather closely under the staging of a forcing house and near to the hot-water pipes, or they can be potted or placed in boxes in a warm house. Any ordinary soil may be employed, and this should not be allowed to become dust dry. Two or three large clumps of Rhubarb are sometimes carefully lifted, packed in soil in large hampers or boxes, and placed in a warm cellar, the result being early and good produce.

Seakale may be started in a garden frame on a gentle hotbed, but great care must be taken not to use rank fermenting material, or the roots will be injured, and the produce spindly. The Seakale will require to be grown in the dark, but this is immaterial in the case of Rhubarb.

Forcing where Growing.

In either instance the best results are obtained from those roots forced where they are grown. All that is required for this work are a few pots for the Seakale and deep boxes or tubs for the Rhubarb (ordinary flour or cement tubs with their bottoms converted into lids are very suitable), and a quantity of leaves and manure which have previously been laid in a heap for a few days. Commence operations by lightly forking up the soil round the crowns, place over these the covers with their lids on, and then bank round the fermenting material so as to bury the covers. Avoid making a great heap, preferring rather to cover a few roots at intervals of a fortnight. If leaves only are used hurdles will be necessary to keep them together. A trial stick should be thrust into the bed and frequently examined, and, should the point be found uncomfortably hot to the hand, the heap must be opened for a few days.

Asparagus.

A bottom heat of about 75° is very suitable for all forced vegetables. A still milder hotbed is suitable for forcing Asparagus, and where it is in contemplation to break up an old bed the roots should be utilised for forcing and then thrown away. The growth from these old plants is produced very freely, but is usually much inferior to that obtained from younger plants. Of course no one would think of breaking up good beds unless there are others to succeed them. When the hotbed is found to be in a suitable condition a layer of rather moist good soil is spread over the surface, and on this the carefully lifted roots are closely laid and covered with more soil, working this well among the roots. The soil being in a moist state and the heat also moist no water will be required at first, but a thorough supply of warm water should be given on the appearance of dryness. If the heat be mild cover the frame closely with mats or litter till the growth is pushing through the soil, when as much light as possible must be admitted, as most people prefer green to blanched Asparagus. The frames should be covered during the night, and should the bottom heat decline to below 70° a lining of fresh material should be given, as the growth is liable to be hard if grown in a low temperature. Asparagus, Rhubarb, and Seakale may all be forwarded considerably where growing if sufficiently protected with rough litter.—J.

Winter Aconites.

It was the late George Augustus Sala who said that—"With summer flowers we seem to live, as with our neighbours, in harmony

are in need of true friendship, not mere acquaintanceship. It is in winter that we are closely drawn to our few flowers in a way we cannot feel when there are hundreds around to distract our affections. It is then that we hang over their blossoms and find in their simple beauty traits and fascinations we cannot see in those of the voluptuous summer.



WINTER ACONITES.

and good order; but spring flowers are cherished as private friendships." How true this is we never realise until the dull days come that are to our gardens as the days of trial are to ourselves—times when we

It was to-day that I found what I have looked for several days—the first blooms of the Winter Aconite in a little shady, cosy corner where neither biting frosts nor chill winds have much power over its

occupants. It was a welcome find; it betokens the host of spring flowers which are the scouts of the great army of Flora. They are on the way, though as this is written the last year of the old century has not yet completed its course, and these brave "eyes and ears" of the floral army will again and again be driven back by biting winds and frosty days and nights. Still, they will advance; and this Winter Aconite is the first to tell us that the days of joy are at hand. How sweet are the hopes which float through our minds as we see these few flowers none can tell but those whose gardens are to them their unfading delight. Even that little bed where these flowers appear brings to our minds the thought that in it, after the Aconite has lost its beauty, there will appear the white bells of the sweet Lily of the Valley, for the two are intermingled, so that when summer comes we may have the sweetness and the grace of the Convallaria instead of the bare soil. Later again this summer flower gives its bright scarlet fruit, like little ruby lamps, in the sunless corner.

Some may say, "Why, the Winter Aconite is a cheap and common flower! Why waste space and time in writing about it?" That it is both cheap and common is not to be gainsaid in some circles, but that it is common in others can be strenuously and justly denied. There are thousands; nay, tens of thousands of gardens, where it is never grown, either because it has never been seen by the owner, or because it has been called "common." Yet there are few of these tens of thousands of gardens, large or small, but would be the brighter and the better of this Winter Wolf's Bane, as *Eranthis hyemalis* is called, besides the other English name I have adopted as the title of this article. Thus one would plead that it might be judged on its merits, and taken for what it is, a simple little golden flower, almost the harbinger of spring, and one which can brighten up the garden in gloomy seasons long before most others have ventured to show signs of growth above the surface. Had it been adapted for cutting what a favourite it would have been; but its mission is to lighten the dark places and the dull days, not to be plucked for the table or to form a personal ornament.

Eranthis hyemalis is a western Europe plant, and, if not a native of England, has been so long with us as to be "one of ourselves." It seems almost needless to say anything about its appearance, but one often finds that the "common" things are unknown, and that some idea of their personality would be welcome. It grows from 3 to 8 or 9 inches in height, and has sessile yellow flowers resting on the involucre of three deeply cut leaves, which form a charming Elizabethan ruff round the six or eight sepals, which are the most conspicuous parts of the flower. The Winter Aconite likes a rather strong soil, though it thrives perfectly in one of a lighter nature provided that it does not become too dry. It delights in partial shade, and is one of the plants which never look better than in grass, where its flowers do not become splashed with soil in heavy rains. It blooms in some districts often as early as December, but its flowering is hastened or delayed by the weather conditions; sometimes it is March before it can make its way through the frozen soil.

One has often wished that one could have some little variety in colouring in the Winter Aconite, though it must be said that we are not likely to get any tint or hue which will be better fitted for the purpose of brightening our gardens. Some who have been working in this direction have raised flowers of a paler yellow, and it is possible that through a creamy yellow—yet to be raised—we may have a white flower of the purity of the allied Christmas Rose. Such a flower would be worth trying for.

One finds in books of reference a Winter Aconite named *E. sibirica*, but I do not think this is in cultivation in this country; at any rate, I have not heard of it anywhere. It is described as blooming in March and April, and as having yellow flowers. It is a native of Siberia, and its absence from gardens seems rather surprising. I have, however, had the pleasure of growing *E. cilicicus*, a Winter Aconite of recent introduction. It blooms later than our better-known species, and is, on the whole, not so good. It comes into bloom later, its blooms are rather darker, its leafy "ruff" is not so pretty, and its hardiness is beyond suspicion. It comes from Cilicia, and is now offered by dealers in this country at a reasonable price.

Whether we grow the *Eranthis* for the garden or the woodland, we must recognise in its little flowers some of the boons of Nature to light up our dark places with gold in the short dull days of the new year.

—S. ARNOTT.

Young Gardeners' Domain.

Thoughts for Young Thinkers.

THE new year of a new century! What do our boys in bothydom think of it? or do they think of it at all? Just a passing thought, perhaps; perhaps more. To me it seems that this dual event should possess more than passing interest for those to whom it must mean so much. In many a bothy there are no doubt conceived big batches of good resolutions, begotten of a worthy desire to take occasion by the hand, ready to spring into birth on the death of the old year. That is good. And doubtless, too, there are some thoughtful workers who are sincere and earnest in their self-imposed tasks for progression, and that is better. Again, perhaps, a few are critically and conscientiously reviewing a year's work—such work as the leisure hour has afforded them time and opportunity for, and by enlarged powers of perception are readjusting or extending their plan to suit it to increased capability. That is best of all.

"Know Thyself," "Consider the End," and "Know Thy Opportunity" were three of the seven mottoes inscribed on the Delphian Temple by seven wise men of Greece, and one cannot but conclude that of the three sections of our young friends in bothydom I have endeavoured to depict the last section are already pupils of those grand old philosophers. Would that I could induce Santa Claus to visit every bothy in the kingdom and tack up on its walls those three old Pagan precepts as companions to the "Happy Christmas" or other modest decorations which even bothydom does not escape. Possibly many young readers recollect certain papers which were promulgated for their benefit in these pages. *Apropos* of those endeavours to help them, a critical friend said to me at the time they were published, "All your preaching and teaching won't do one ha'porth o' good to the young fellows now-a-days; all they think of is dancing or dangleing about in their leisure." I neither believed that then nor do I now, but I do believe that a little judicious direction may often prevent a young traveller from going astray on life's journey. With this declaration of my faith in the rising generation of gardeners come co-existent thoughts on our own responsibility.

"Temptation hath a music for all ears." Is it a matter for surprise that young fellows situated in some suburban garden, well under the fringe of that smoke cloud which hangs over a big city, should be attracted by brilliant lights, moving masses of humanity, and all the glare and fanfare of restless life? or is it surprising that a boy with his pay in his pocket, and penny trams running here, there, and everywhere, should periodically join the gods in the gallery at "The Empire" or "Lyric" Music Hall? Whilst admitting that my friend's adverse criticism was not wholly unjustified, we must pity, but can scarcely condemn young boys for falling into these social traps which are ready to ensnare them; and are old boys entirely blameless if they do not use the undoubted influence they possess to counteract the evil? "Can a lad be always tied to a head gardener's apron string?" may be asked. No, certainly not; or is it desirable, but it is possible to weave a far stronger tie of sympathy 'twixt old heads and young hands which may unite the opposing ends of responsibility.

There is, however, a divergence of opinion over such points. Many thinkers, many thoughts. These thoughts have, unintentionally, strayed from the bothy to the gardener's house, which is oft so near but yet so far, whereas they were only intended as a seasonable greeting and a timely reminder to our young friends. Let each mark that in himself his safety lies. Will our boys think over those ancient sayings previously quoted and observe what a vast field they embrace? The contemplation of them should engender serious thoughts now, and possibly prevent sad ones hereafter. The best actions spring from the noblest thoughts.

Should any of our boys be happily placed under a head gardener whom they know is willing and anxious to help them at this crucial period of life, and it is easily seen and known, I most sincerely hope that they will know their opportunity, and that they will think twice ere doing any foolish thing to render his help and counsel null and void. Second thoughts, which are often best, may cause them to hesitate ere doing what may not only blight their own lives but bring disappointment to a master one of whose chief pleasures is to help them. Thoughts are fugitive things, but if from wise thoughts they draw sound conclusions this can scarcely happen. If a young fellow knowingly allows any weak point to remain in his armour after being made cognisant of it, for him one feels unqualified pity. However well-developed his physical strength may be we can only infer that he is more or less mentally weak—the will-power is wanting.

"What can I do?" some young thinker may ask, who has not thought very deeply over the problems of life. Think further, young friend, and I will then ask you in answer to that question, "What can you not do?" A philosophic student of his fellow men once remarked that he always felt as if he ought to lift his hat to every bright-faced boy he met—not for what the boy was, but for the boundless possibilities which were open to him. Do not, however, lose yourselves in the contemplation of what you may be; do what you ought to do now, and you will eventually be what you ought to be. Fight manfully on this battle of life, and may the new year bring blessings on your work, and the new century prosperity to your lives, is the hearty desire and sincere greeting to each and all of you in bothydom from—AN OLD BOY.



Fruit Forcing.

Vines.—*Earliest Forced in Pots.*—Exercise great care in ventilating, avoiding chills, such as those resulting from cold currents of air, admitting it chiefly by the top ventilators, and only moderately when the air is cold and sharp. Encourage root action by supplying tepid water at not less than the mean of the house and not much above it. Disbud and tie down the shoots before they touch the glass. Stop the growths one joint beyond the show of fruit, the point of the shoot being pinched off when the leaf at the joint is from the size of a halfpenny to a penny piece. The laterals as they show are pinched at the first joint, and this procedure is also practised on the sub-laterals as made. Thus root action is accelerated and maintained by the developing foliage, which is quite as necessary for absorbing as the leaves for elaborating nutriment. Maintain a night temperature of 65° until the flowers open, and then keep the house at 70° to 75° by artificial means, with a rather drier condition of the atmosphere. As soon as the fruit is set supply liquid manure copiously whenever water is required at the roots, but only when the soil is moderately dry, maintaining a moist atmosphere by damping the paths two or three times a day, and occasionally with liquid manure, keeping the evaporation troughs charged with the same, taking care not to use the liquid too strong or the ammonia will injure the foliage.

Early Forced Planted-out Vines.—As the growths develop encourage root action by top-dressings of superphosphate and blood manure in equal parts, adding one-fourth of double sulphate of potash and magnesia, mixing, and applying 3 or 4 ozs. of the mixture per square yard, watering in moderately. Do not hurry in disbudding, but let it be seen which growths give the most promising show for fruit, and then disbud gradually. Tie down the shoots before they touch the glass. If weakly stop them at three or four joints beyond the bunch; if strong they may be pinched at one joint beyond the fruit, and then pinch the laterals to one joint as regards the weak shoots, and leave two or three on strong growths after the flush of sap has been concentrated on the bunch, extending the growth so as to secure a supply of well-developed foliage all over the house. Remove surplus bunches as soon as choice can be made of the best, reserving the most compact and avoiding overcropping. Maintain a night temperature of 60° to 65°, 70° to 75° by day, and a genial condition of the atmosphere by damping the paths and walls two or three times a day.

Houses to Afford Ripe Grapes in June.—The Vines for this purpose must be started at once, for though they may be forced so as to afford fruit in May, they are best brought forward gently, and a margin allowed for unfavourable weather. The outside border must be well protected from inclement weather, as the roots cannot possibly act in frozen ground. If fermenting materials are used they must be kept uniform in temperature, and if that cannot be effected it is better to dispense with them altogether. A good thickness, say 6 inches of dry leaves, with fern or litter on top, and so disposed in a sloping manner as to throw off the wet, answers admirably. Inside borders will need a supply of water at a temperature of the mean of the house to bring them into a proper state of moisture, being careful not to make the soil too wet, as that hinders root action, and may be the precursor of that sodden and sour condition which inevitably results in shanking and other ills. The temperature should be maintained at 50° to 55°, advancing to 65° from sun heat. Damp the house and Vines two or three times a day, but do not keep them constantly dripping with water, for that only encourages aerial roots. Ventilate on all favourable occasions, for a sweet atmosphere has a decided effect for good on the Vines.

Early Houses of Muscats.—To have Muscat of Alexandria ripe in June the Vines require to be started at the beginning of December, or where the Vines have been started before, at the 1st of this month. The heat should range from 55° to 60°, and when the buds break raising it to 60° to 65° at night, and 70° to 75° by day. Then the growths will develop properly, forming leaves of good size, and (with due attention to ventilation) substance.

Houses from which the Grapes Have been Cut.—The Vines should be pruned, as a rule, shortly after the leaves fall, but this is often delayed on account of Grapes hanging. Thus the Vines are deprived of that complete rest which pruning and keeping them cool assures. Healthy Vines may be cut to one, or at most, two buds; but weakly Vines, and those with long-jointed wood, may be left a little longer, cutting in all cases to a plump bud. This will cause the spurs to become long sooner than by close pruning, and necessitate a renewal of them on the rods, which may be effected by encouraging a growth from the base of the spur or rod, and cutting away the old in favour of the new. The extension system is, perhaps, the best under such circumstances, having

a succession of rods from the main stem, and cutting out those that reach the extremity of the space to a cane nearer the base and well situated for displacing that cut away.

Thoroughly cleanse the house, removing all loose bark, but avoid close peeling and scraping the Vines down to and into the new bark and wood. Wash them with a solution of caustic soda and pearlash, 1 oz. each to 1½ gallon of water. Remove the surface soil down to the roots without injuring them, raising any that have a tendency to descend, supplying good turfy loam with an admixture of some approved fertiliser. Vineries are often utilised for plants, but the temperature should not exceed 45°, air being admitted on all favourable occasions, so as to keep the structures as cool as possible, no plants being admitted except those only needing protection from frost.

Late Houses.—Maintain a temperature of 45° with a dry atmosphere in houses where Grapes are hanging. Examine every bunch frequently, and remove all decayed berries. Ventilate the house on fine dry mornings, and keep it closed when the weather is damp, but there must be a gentle warmth in the pipes to prevent a stagnant atmosphere. In the case of Grapes ripened comparatively early, and those are the best for keeping, the Grapes may be cut, the ends of the stems being inserted in rain water secured in a inclining position, so as to admit of the fruit hanging clear of the bottles. Any dry room will be a suitable place, where an equable temperature of 40° to 45° is maintained. This will admit of the Vines being pruned and the house cleansed, the Vines then having a few weeks' rest, and with that they start strongly when set to work, as they should be soon after the middle of February.

THE BEE-KEEPER.

Unsold Honey.

EXCEPT in a few favoured districts the past season was not a good one for honey production, and there should be no difficulty in finding a ready market for the honey on hand. We are, however, constantly receiving inquiries from bee-keepers in various parts of the country complaining of the difficulty they have of selling their produce. Many of the samples that have come to hand are not of first-class quality, chiefly owing to the fact that the honey is dark in colour. Honey of this description, although good in every other respect, does not sell as readily as light coloured honey.

We never experience any difficulty in this respect. This year our harvest was less than a quarter of a crop; the honey, though it was dark, was disposed of almost as soon as it was obtained. Owing to the fact that bee-keeping has made such headway during the past quarter of a century honey is not now considered such a luxury as it was before the modern frame hive came into general use. The days of big prices are gone, but by close attention to the details in connection with putting the honey up into marketable form a great improvement may be made.

Grading Honey.

One step in the right direction is grading the various samples of honey. During the past season there was little difference in the colour of the honey we obtained, but in a favourable year we do not find any two samples exactly alike. Whether the apiary is large or small it is a very easy matter to grade the different samples and keep them separate. The plan we adopt is to keep a numbered sample of each at the time the extractor is emptied. The vessel containing the bulk has a corresponding number; there is thus no difficulty in the grading and keeping each sample separate when put up in saleable form.

If extracted honey is sold to a retailer it should be put in 1 lb. glass jars; those having a screw top are better than the tie-over jars. These ought to be neatly labelled with the bee-keeper's name and address. This will be a guarantee of its purity. In a general way there need be no difference in the price of the various samples if only honey of good flavour is placed on the market.

There is a better market for comb honey in sections than in shallow frames. For this reason the majority of it should be obtained in this form. The wood must be cleared of all propolis adhering to it by scraping with a blunt knife, and if stained, by rubbing with coarse sand paper. The tops of the sections should always have a mark placed on them so that they may be stood in the same position they occupied in the hive. This will prevent them leaking.—AN ENGLISH BEE-KEEPER.

TO CORRESPONDENTS

All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Apple Borsdörfer (W. Raby).—This is a very old German Apple which is described by Dr. Hogg in the "Fruit Manual" as follows: Fruit shining pale waxen yellow in the shade, and bright deep red next the sun, strewn with dots which are yellowish in the sun and brown in the shade. Tree a free grower and very hardy, not subject to canker, and attains the largest size; is very prolific when it has acquired its full growth, which, in good soil, it will do in fifteen or twenty years; and even in a young state it is a good bearer. If grafted on the Paradise stock it may be grown as an open dwarf or an espalier. The bloom is very hardy, and withstands the night frosts of spring better than most other varieties. This, above all other Apples, is the most highly esteemed in Germany. Diel calls it the Pride of the Germans. It is believed to have originated either at a village of Misnia, called Borsdorf, or at a place of the same name near Leipsic. According to Forsyth it was such a favourite with Queen Charlotte that she had a considerable quantity of them annually imported from Germany for her own private use. It is one of the earliest recorded varieties of the continental authors, but does not seem to have been known in this country before the close of the last century. It was first grown in the Brompton Park Nursery in 1785. It is mentioned by Cordus, in 1561, as being cultivated in Misnia, which circumstance has no doubt given rise to the synonym "Reinette de Misnie;" he also informs us it is highly esteemed for its sweet and generous flavour, and the pleasant perfume which it exhales. Wittichius, in his "Methodus Simplicium," attributes to it the power of dispelling epidemic fevers and madness. There is a proverb in Germany which says, "Ihre wangen sind so roth wie ein Borsdörfer apfel" (Her cheeks are as red as a Borsdörfer Apple).

Gesnera cinnabarina (A. D. R.).—This is one of the most brilliant and beautiful of stove plants for flowering in the winter. Those which you have seen and admired were probably started about mid-summer. We have potted tubers at the time, and started them in a frame, and have grown the plants in it till September, or as long as the weather was warm enough, then placed them on a shelf in the stove. They usually commenced flowering in January, or when the Poinsettias were nearly over, producing an effect not surpassed by those plants during a period of two months. Fine plants may be grown in 6-inch pots, forming dense pyramids of orange-scarlet flowers and handsome velvety leaves, which contribute materially to the beauty of the plants.

Tuberous-rooted Begonias (J. W. W.).—The old tubers should still be kept cool and dry, and when they are started in March let it be in boxes of soil rather than in pots. These Begonias are at their best during the first and second years of their life, degenerating when kept longer. In order to have strong young plants of this year's raising ready for the beds next June there must be no delay in seed-sowing. Give the preference to erect flowering varieties or strains for the beds. Take great pains with the preparation of pans or shallow boxes, finishing off with a layer of very fine loamy soil, which should be duly made level, firm, and moist. Sow regularly and evenly; do not cover with either soil or sand. Place the pans in a moist brisk heat, taking care that worms have no access to them. Cover with squares of glass and shade heavily. Examine frequently, and whenever the soil approaches dryness partially immerse the pots in a bucket or tank of tepid water, the moisture then draining without disturbing the minute seeds.

Injurious Fumes from Plant Stands in Greenhouses and Vineries (Colonel).—The fumes arising from the "carbolineum wood" of which the plant stages are made, cannot be successfully prevented except by coating them with paint, giving at least three coats, and even then the acid will be given off on parts of the stages where the paint wears off, especially under the prevailing conditions of moisture. We cannot suggest any chemical remedy, but perhaps some of our correspondents may be able to point to a substance for neutralising the acid, and which, applied to the stages, would prevent their giving out injurious fumes. In the meanwhile we can only advise the continuance of the ventilation to as great an extent as possible consistent with the safety of the plants.

Deutzia crenata flore-pleno (F. W. G.).—This is a very useful plant for forcing, but does not flower so early as *D. gracilis*. Pruning should be done immediately after flowering, and be limited to the removal of those portions that are exhausted by flowering, not necessarily removing the flowering branches entirely, as certain portions of these, which are easily observable, form spurs, which in turn produce clusters of flowers, but at the same time preserve and encourage the young growths. If one or two of these are very strong and likely to grow much longer than the rest pinch out their points while still young, and they will break and make second growths that will be strong enough for flowering. About a fortnight after flowering and pruning repot if needed, and let the plants have a very light position under glass until the weather permits their

being placed in the open air, then plunge in an open sunny position, watering them the same as you do Chrysanthemums. If you want very large bushes in the shortest time you may plant out the Deutzias and repot in the autumn; but plants so treated do not usually flower so freely as those kept in pots.

Peas in Pots (Amateur).—Peas are not amenable to hard forcing, but may be forwarded considerably under glass. Comparatively tall growing varieties can be successfully grown under glass in pots or otherwise, but all things considered, English Wonder, Chelsea Gem, and William Hurst are the best for pot culture. Old Chrysanthemum soil suits Peas well. Well drain the pots and three parts fill with soil, making this firm. Sow the seed somewhat thinly, and cover with 1 inch of soil. Fifty pots is none too many for a batch, about three dishes being had from these, and a succession should be provided by making another sowing a fortnight later. The pots may be arranged on the beds or floors of vineries or Peach houses, being gently forced till the plants are up, when the high back shelves, front stages, and front beds in the same houses will be the best places till such time as the

night temperature exceeds 55°, when other light but cooler quarters should be assigned the Peas. Not till the pots are well filled with roots will much water be needed, after which the plants will take it and liquid manure freely.

Mildew on Roses (R. T.).—If the specks are on the old leaves they will probably do little harm; if on the young cut the shoots off and burn them. Still if the attack is severe and it is mildew, it should be destroyed. A great grower says the following is a perfect cure for mildew:—1 lb. soft soap, ½ lb. sulphur, and 10 gallons of soft water; mix with boiling water, and add the remaining quantity cold, stir constantly while using. Of course you can mix a less quantity, preserving the proportion. It should be thoroughly applied on every mild morning when plenty of air can be given afterwards, and the pipes heated for drying the house quickly. Any plants that may be in should be removed, or they might be injured by the drenching to which they would be subjected. The house should be kept cool, unless plants in it require heat, for the next month or two.

Forcing Melons (F. R.).—Melons, to ripen in May, ought now to be starting, the plants grown in ample heat and kept near the glass, so as to have them sturdy, not planting out until they are strong, say a foot high, having them supported by small sticks and the laterals rubbed off as they show. Plants will do well in boxes about 18 inches square, and a foot or 15 inches in depth, the plants trained with a single stem, rubbing off all laterals to the height of the bottom wire of the trellis, and then every other lateral on the opposite side of the line. The laterals left will probably show fruit at the second or third joint, and if the blossoms be duly impregnated the fruits will set and swell, ripening from an early January sowing in May. If no fruit is shown on the first lateral, stop at the second joint, and plenty will appear on the sub-laterals, but the crop will be about three weeks later in ripening.



APPLE BORSDÖRFER.

Cocoa-nut Fibre Refuse (*Amateur*).—Cocoa-nut fibre refuse alone will not effect the desired improvement in your soil. That which it is most in need of is draining, and next to this a liberal application of such mechanical disintegrators as old mortar and cinder ashes, dug in and well mixed with the soil as soon as possible. If the latter could be thrown up into ridges, thus, Λ , 2 feet wide at the base, and allowed to remain in that position until March, and the fibre applied before levelling down, you might render it both workable and considerably lighter.

Early Lettuces (*W. H. B.*).—Since the introduction of the extra quick growing Cabbage varieties there has been less need to take so many pains in raising and wintering a number of plants to give an early supply of hearts. Both Early Paris Market and Veitch's Golden Queen are of exceptionally quick growth, and are second to none in point of quality. Sow seeds at once. Especially ought thick sowing to be avoided, crowded seedlings either damping off badly or quickly become worthless. There is, however, no necessity to pot the plants; in fact, they move better out of boxes, and ought to be early pricked out in these accordingly. Duly hardened and planted out on warm borders they form hearts very quickly, but where frames or the room can be spared a few score ought to be gently forced. Shallow frames on a mild hotbed are the best positions for them, but a moderately good supply might be had with the aid of boxes, these being located in a light position in a newly started vinery or Peach house.

Zonal Pelargonium (*B. A.*).—Zonal Pelargoniums will only flower freely and continuously in winter in a very light house indeed, with nothing between the plants and the glass, and the temperature should not remain long below 50°, and the plants must be vigorous, with plenty of active roots. Your plants were probably too root-bound; and very stout young plants previously topped and breaking, potted a month or two later, would probably have been better in the small-sized pots used. Old plants cut back in June or early July, shaken out, potted firmly, and grown outdoors till the autumn, then placed in frames for a time, flower profusely in early winter in a warm light house, but not continuously till spring. Some varieties are much better than others for winter blooming. Your plants will flower in early summer if not pruned, or slightly; later if cut back in February or March, shaken out a month afterwards, and potted firmly in fresh loam. The roots must be kept active, and they are checked by too much water or liquid manure, also if they get much too dry now and then.

Fowl Manure (*W. White*).—Fowl manure being very powerful should not be applied too liberally, about 6 tons per acre being a sufficiently heavy dressing for ground to be cropped with vegetables, and is best applied shortly before the crops are sown or planted. For garden crops we use it at the rate named—viz., 2½ to 3 lbs. per square yard with very satisfactory results. It is applied to the surface evenly and pointed in with a fork lightly. For flowers it is not advisable to give so heavy a dressing, as it sometimes proves too powerful for the delicate and moderate growing kinds, promoting luxuriance of growth not favourable to the production of flowers; therefore we think it best to give a light dressing about February, and again in June to plants that have been planted in autumn or are permanent, in each case pointing it in lightly. For ground intended to be planted with flowers it may be applied just before planting, pointing it in with a fork, following with a light sprinkling between the plants a little before they come into flower, or when they are showing the flower buds, giving at the same time a good watering if the weather be dry. It is assumed the manure is dry and mixed with sand or road grit. If the manure is unmixed it must be used in lessened proportion. Being rich in ammonia it should not be left on the surface of the soil, as the ammonia will be rapidly evolved and pass away. It should be kept dry, and not placed thickly so as to heat before it is used.

Names of Fruits (*B. C.*).—1, Bramley's Seedling; 2, Roundway Magnum Bonum; 3, Newton Wonder. (*O. P.*).—1, Wellington; 2, Lord Derby. (*F. J. B.*).—1, unknown, probably a local seedling; 2, Small's Admirable. (*W. F. G.*).—Pear Beurré d'Arenberg; Apple Golden Reinette.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*N. G.*).—1, *Eranthemum pulchellum*; 2, *Justicia calycotricha*; 3, *Platyloma rotundifolia*; 4, *Todea intermedia*. (*C. F.*).—1, *Dracæna terminalis*; 2, *Cyperus alternifolius*. The Crotons could only be named by comparison in a large collection, such as that grown by Messrs. Veitch & Sons at Chelsea.

Covent Garden Market.—January 2nd.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, table, ¼ bush. ...	2	0 to 4	Oranges, case ...	6	0 to 15
„ cooking, bush. ...	2	6	Pears, crate ...	3	0
„ Californian, case ...	7	6	„ stewing, case of		
Chestnuts, bag, from ...	5	0	72 to 120 ...	4	6
Cobnuts, doz. lb., best ...	4	0	„ Californian, case	15	0
Grapes, black ...	0	6	„ ¼ case ...	4	0
„ white, per lb. ...	1	6	Pines, St. Michael's, each	3	0
Lemons, case ...	9	0	Walnuts, bag ...	4	6
Melons, house, each ...	0	6			

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	6 to 4	Mushrooms, forced, lb. ...	0	8 to 0
„ Jerusalem, sieve	1	6	Mustard and Cress, pnnt.	0	2
Asparagus (Sprue Grass) ...	0	8	Onions, Dutch, bag ...	3	6
„ Paris Green ...	4	6	„ English, cwt. ...	5	0
Beans, French, per lb. ...	0	6	Parsley, doz. bnchs. ...	2	0
„ Jersey, per lb. ...	1	6	Potatoes, cwt. ...	3	0
Beet, red, doz. ...	0	6	Rhubarb, doz. ...	1	6
Brussels Sprouts, sieve ...	0	9	Savoys, tally ...	2	0
Cabbages, tally ...	3	0	Scotch Kale, per bushel ...	0	9
Carrots, doz. bnchs. ...	2	0	Seakale, best, doz. ...	10	0
Cauliflowers, doz. ...	1	6	„ 2nd, doz. ...	6	0
Celery, bundle ...	1	0	Shallots, lb. ...	0	2
Cucumbers, doz. ...	12	0	Spinach, bush. ...	1	0
Endive, score ...	1	6	Tomatoes, English, lb. ...	0	4
Herbs, bunch ...	0	2	Turnips, doz. ...	2	0
Leeks, bunch ...	0	1½	Turnip tops ...	0	9
Lettuce, doz. French ...	0	0			

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Asparagus, Fern, bunch	1	6 to 2	Lilac, white, bunch, ...	4	0 to 6
Carnations, 12 blooms ...	1	0	Lily of the Valley, 12 bun.	12	0
Cattleyas, doz. ...	10	0	Maidenhair Fern, dozen		
Chrysanthemums, dozen			bunches ...	4	0
„ blooms ...	1	0	Marguerites, doz. bnchs.	2	0
Daffodils, doz. ...	12	0	„ Yellow, doz. bnchs.	2	0
Eucharis, doz. ...	4	0	Mimosas, bnch. ...	1	0
Gardenias, doz. ...	3	0	Odontoglossums ...	6	0
Geranium, scarlet, doz.			Poinsettias, doz. blooms.	8	0
„ bunches ...	12	0	Roses (indoor), doz. ...	2	0
Hyacinths, doz. ...	4	0	„ Safrano, doz. ...	1	6
Lilium lancifolium album	3	0	„ Tea, white, doz. ...	1	0
„ „ rubrum	3	0	„ Yellow, doz. (Perles)	2	0
„ various ...	4	0	Smilax, bunch ...	3	0

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acers, doz. ...	12	0 to 24	Foliage plants, var., each	1	0 to 5
Arbor Vita, var., doz. ...	6	0	Geraniums, scarlet, doz.	6	0
Aspidistra, doz. ...	18	0	„ pink, doz. ...	8	0
Aspidistra, specimen ...	15	0	Hydrangeas, white, each	2	6
Azaleas, various, each ...	2	6	„ pink, doz. ...	12	0
Bononias, doz. ...	20	0	„ paniculata, each	1	0
Cannas, doz. ...	18	0	Lilium Harrisii, doz. ...	8	0
Crotons, doz. ...	18	0	Lycopodiums, doz. ...	3	0
Dracæna, var., doz. ...	12	0	Marguerite Daisy, doz. ...	8	0
Dracæna, viridis, doz. ...	9	0	Mignonette, doz. ...	8	0
Erica, various, doz. ...	8	0	Myrtles, doz. ...	6	0
Euonymus, var., doz. ...	6	0	Palms, in var., each ...	1	0
Evergreens, var., doz. ...	4	0	„ specimens ...	21	0
Ferns, var., doz. ...	4	0	Roses, doz. ...	6	0
„ small, 100 ...	4	0	Stocks, doz. ...	8	0
Ficus elastica, each ...	1	6			

Trade Catalogues Received.

G. Bunyard & Co., Maidstone.—*Seeds.*

Cooper, Taber & Co., Ltd., Southwark Street, London.—*Wholesale Seed List.*

Dicksons, Ltd., Chester.—*Seeds.*

A. Dickson & Sons, Ltd., Royal Avenue, Belfast.—*Seeds.*

Dickson, Brown & Tait, Corporation Street, Manchester.—*Seeds.*

Diokson & Robinson, Manchester.—*Seeds.*

Dobbie & Co., Rothesay.—*Catalogue and Competitors' Guide.*

S. Doole & Sons, Heathfield Gardens near Chester.—*The Amateurs' Garden Annual.*

C. E. & F. W. Lilley, Ltd., St. Peter in the Wood, Guernsey.—*Chrysanthemums.*

McHattie & Co., Chester.—*Seeds.*

T. Methven & Sons, 15, Princes Street, Edinburgh.—*Seeds.*

E. Webb & Sons, Wordsley, Stourbridge.—*Seeds.*



The Pure Beer Question.

CONSIDERABLE agitation is apparent in agricultural circles all over the country in connection with this matter, and it certainly is natural that farmers should snatch at any straw that seems to offer them the least support in their struggle with adversity; but we fear that unless the consumer throws his weight into the scale the unaided efforts of farmers may prove of little avail, even if with the best of intentions they do not bring about more harm than good.

Petitions are being numerously signed at all the agricultural centres, having for their object the prevention of all malt substitutes being used in the brewing of beer, and we must say that there is good reason for asking that a beverage, which, as its name implies, has been for centuries made from Barley should continue to be so brewed or should bear some other name. Bere has long been the alternative name for Barley, and we suppose that the word beer has originated from it, though the old name in this country for malt liquor was ale. "Nut brown ale." "Jolly good ale and old."

As beer and ale are both used in connection with the same liquor, the latter being the older, why not use it to describe liquor brewed entirely from malt and Hops, and leave the sugar brewer to call his concoctions anything else he likes?

That legislation preventing the use of sugar can be passed is utterly absurd. For after all Barley malt is only another form of sugar, though it is acknowledged to be the best form of brewing, but a long way from being the cheapest. It is all a matter of cost, and here lies the crux of the whole question. The brewing trade has had such a monopoly of late, and by using sugar freely, has been able to beat down the price of malt so that the initial cost of brewing, apart from duty, has been very much reduced.

Increasing profits have encouraged brewers to fall one over the other in the effort to acquire licensed property, and in many cases they have given such high prices for the same that their invested capital has become a heavy charge on the profits. A reversion, therefore, to the old conditions of brewing would be disastrous to the trade, and the whole weight of the brewing interest, which is probably one of the most powerful, and certainly the best organised of all the industries of the kingdom, will be thrown into the scale against any such proposals.

We therefore trust that farmers will not ask and hope for too much from the opportunity that is given them at the present time, but aim at having malted liquor put in the same position as articles of food are with regard to adulteration. They must attempt to obtain the co-operation of beer consumers in obtaining guarantees that the latter shall be supplied with pure beer when they ask for it, and we have been glad to notice large numbers of non-agricultural beer drinkers signing the petitions above referred to.

We have lately noticed frequent references in the Press to the difficulties entailed on brewers by the use of unsuitable water, and the consequently absolute necessity for the use of malt substitutes if drinkable beer is to be produced in conjunction with the use of such waters. But this is a begging of the whole question, for there are other places besides Burton-on-Trent where good water can be obtained, and it may be of use in the future to place certain restrictions on the character of the water to be used by brewers in their business if the use of unsuitable water is shown to lead to the use of undesirable material in the mash tub.

Christmas Prices.

There can be little doubt that providers of Christmas meat have, taking things all round, had a very disappointing trade, and been poorly paid for all their trouble and expense. Geese and ducks have been the only articles to realise a really satisfactory price, and that on account of scarcity, owing to the ill fortune which during last season dogged the footsteps of rearers of those birds. It is not often that we get a season which is equally suitable for turkeys and ducks, and this season, as usual, the former have done as well as the latter badly. We never saw turkeys so plentiful in country markets, a choice of the finest birds being easily obtainable at 9d. per pound, and many birds could be had at 7d.

Good table fowls have been very plentiful and cheap, and it would really seem to be a matter for congratulation that at last the British farmer is mastering the art of producing first-class poultry. Prices are no doubt being adversely affected by the sad results of the war, many annual festivities having been given up owing to family bereavements.

Pork has met an average sale, but not as good as was expected, or rather as recent markets had encouraged feeders to hope for. Beef and mutton were both equally stagnant. Markets which were expected to be thinly supplied were quite as full as usual, and butchers showed an increasing disinclination to purchase big overfat stock. One butcher informed us that, for the first time, he was without a prize beast, and said he preferred to buy polled Angus bullocks, weighing about 1000 lbs. per carcass, though he had to pay about 1d. per lb. more for them than he would have had to give for a prize Shorthorn. He said he was tired of subscribing benefits to the tallow-chandler.

Another butcher gave 78s. for a prize wether (half-bred Oxford) which bumped the scale at 168 lbs. It cost, therefore, 5½d. per lb., which sounds cheap for a cross-bred wether, but customers for a 21 lb. leg are not very plentiful, whilst the forequarters from such a sheep are hardly saleable.

The repetition of the disappointments year after year at the Christmas markets is becoming utterly wearisome, but we suppose that as long as prizes in the shape of cups and medals continue to be offered farmers will continue to overfeed their animals in the keenness of competition for these prizes, and although we should be the last to decry the value of healthy competition we think that fat-stock show committees would do well to revise their schedules still more than has been already done in favour of early maturity and saleable quality.

Work on the Home Farm.

With the advent of the New Year, bringing fine open weather with it, farmers will be encouraged to think that at last their labour troubles may be mitigated by a fine working season, and in this connection we may here observe that a close study of the weather of the past century reveals the fact that weather such as we have been having during November and December has invariably been followed by a hot dry summer. Therefore it will be advisable to get spring corn in the ground earlier than usual. Sow the small seeds with the grain, and apply salt for Wheat.

Although weather has been favourable little headway has been made with work lately. Carting roots and ploughing have been the only work in hand for the horses, and as nowadays all the ploughmen require a day or two off about Christmas time, the only thing to be done is to let them go at as convenient times as we can arrange, and give the horses a rest. At one time single men never thought of asking off except to go home for the village feast, but now that there are trips to the country towns for the pantomime, they all must go, leaving the foreman or master to do all necessary work, and, as one foreman remarked, "It's no pantomime for me to have twenty horses to feed."

Threshing has to be done in its turn, but there is no change for the better in either yield or values. Certainly there is economy in the threshing account this year, but it is about the only item of expenditure in which the farmer will be able to make a saving.

We notice that the use of superphosphate is blamed for the presence of arsenic in beer, so we must consider whether we should not turn to basic slag, which is not prepared with sulphuric acid. We shall, however, stick to the super as a mainstay, for we think the idea that the small amount of active sulphuric acid in superphosphate can possibly have the effect of producing an appreciable quantity of arsenic in the grain of Barley is so supremely ridiculous as to be unworthy of anything but a laugh.

There are complaints that Turnips are not keeping well, but sheep are doing well on them, and lair is now very good. Ewes must be well kept from the present time to insure success at lambing time, but they must not be kept too continuously on Turnips. Saturday to Monday on grass is a very good plan, and one that is practised by many flockmasters of experience.

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Journal of Horticulture.

THURSDAY, JANUARY 10, 1901.

A Burning Question.

THE question of the hour in the gardening world, now that the "Mums" have waxed and waned, appears to resolve itself into the ways and means of economic heating. Indeed, as far back as when big buds began to bloom some of the more enthusiastic growers of the popular plant were wont to emphasise this by exchanging the old familiar greeting of "How's the Mums," into "What are you burning, and what do you pay?" Such, at least, has been the writer's experience, who also ventures to think that there is no more important matter ripe for discussion, or any more disagreeable fact to be faced as we enter the new century, whether it be in the commercial or in the private phase of gardening, than that of the burning question.

Under normal conditions of the coal market this item in a gardener's balance-sheet is too often a source of friction; now it is presented to us under a more serious aspect than has ever before obtained. In view of recent events, and with a future pregnant with possibilities and probabilities, the heavy drain upon our coalfields by the voracious appetite of gigantic navies is a factor which cannot be ignored; being, as there is, not only an alarming increased home consumption, but an open door through which British coal goes to feed the distended stomachs of our quondam friends' ironclads. If an army fights on its stomach, so surely does a fleet as represented by its coal bunkers.

Fuel supplies must to a certain extent depend upon local situation or, at least, facility of transport to the consumer. Hitherto the City of Dublin, being practically a non-manufacturing centre with the advantages of a seaport, has supplied suburban gardens at a reasonable rate, coke, breeze, and slack having probably been the most in demand and the most economical for the purpose. The price of these products has, it is needless to say, risen in

During FIFTY-TWO YEARS the "JOURNAL OF HORTICULTURE" has been written by Gardeners for Gardeners, and in its principles, its practice, and its price it still remains the same. One alteration is perhaps, however, necessary. Our modern methods of production have rendered the price old-fashioned, and hence in order to meet the wishes of the present generation of Gardeners the "JOURNAL OF HORTICULTURE" will hereafter be sold for TWOPENCE instead of Threepence.

ratio to market advancements elsewhere, but apart from that a fresh factor has to be taken into account—viz., the Dublin Gas Company having introduced the manufacture of water gas, a certain percentage of which is mixed with ordinary gas, the output of coke is not only thereby lessened but further diminished by the company employing it in the manufacture of water gas. Contingent upon this innovation the price of coke has within the last year gone up 50 per cent. To sum up, coke, which has been an economical and generally satisfactory agent for horticultural heating, can no longer be regarded so at its present prohibitive price; nor is there any prospect of its falling to normal rates.

Were this a matter of local interest only, its introduction here would not appeal to the great majority of "our Journal" readers; as it is, there is a probability of the same causes which debar Irish gardeners from the use of their favourite fuel being in operation wherever gas companies abound. Breeze, which rules at a lower quotation than any fuel on the market, has been tried and found wanting in every desirable quality save low price, so much so that it is dear at that—perhaps the dearest of all; whilst slack, unless used in combination with coke, is both dirty, wasteful, and generally unsatisfactory. In Wigan coal, which possesses fair heating powers, and is, save Scotch coal, the lowest priced in Dublin, it was thought the cheapest heating medium had been found, until anthracite, which is quoted at about 6s. per ton higher than the Wigan, had been tried, and proved to be the best fuel obtainable, and possibly the best we shall ever obtain, although at first sight its price does not recommend it.

Anthracite is, of course, too well known in the greater gardening community of England to require any recommendation from a Green Islander, although as far as kinds of fuel used in English gardens go it is still in the minority. In Irish gardens it appears until lately to have been virtually unknown; now the force of circumstances is pushing it to the front, and from present experience it is likely to become the leading fuel for garden purposes. The greater heating power, weight for weight, and cleanliness in consumption especially recommending it, provided the means are given for its perfect combustion. Its smokeless qualities are, too, highly appreciated, for, apart from all consideration of foul fumes, the greatest wasters of heat where periodical cleaning is neglected, soot-begrimed glass and woodwork is entirely avoided. It was not intended in this paper to promulgate the praises of anthracite, but somehow one has been lured on to put forth one's own experience, when the primary intention was really to elicit the opinions of others on this burning question.

Circumstances alter cases, but there are other points to be briefly touched upon in the matter of economic heating. A great source of waste lies in lengths of pipes between the boiler and the houses, which in few cases can be utilised by placing frames or pits over them. These are, of course, generally enclosed by brick or tile channels, whilst probably in the immediate neighbourhood of the boiler they are entirely exposed. The advisability of encasing all such pipes in a non-conducting material, several kinds of which are made for the purpose, is obvious, and should enter into the economist's calculations. There is, also, much room for improvement in methods of stoking. A good stoker who is anxious to burn the smallest quantity of fuel and extract from it the greatest possible amount of heat, is what we term here "a jewel of a man." Furthermore, should he by keen observation be enabled to put into the houses just as much artificial heat as is wanted, and no more, anticipating any wintry sunbeams as help to the end, then one would be inclined to go further and say he is an angel in disguise.

Among the great and little robbers of our heat supply, however expensively or economically produced, are faulty arrangement of the pipes, insufficient piping, and leaks entailing the constant indribbling of cold water from the supply box. Most gardeners have had experience of all types of heating, from those in which perfect arrangement of the pipes insures a free circulation of the water in them, and once filled will go for months with an infinitesimal addition, as they should do, to those where the merry music of water running into the cistern is varied only by an occasional deluge from it when the fire is pushed on and the water is pushed out. This is the effect of a cause as simple as it is in some cases easy to rectify. All flow pipes should have a gentle rise of 1 inch in 6 feet from their exit at the top of the boiler to the farthest point at which the air vent should be placed, and from which the return commences its declination at the same rate. However, such matters are perhaps too simple to further detain, beyond remarking that where this has not been considered in laying the pipes, or the piers sustaining the pipes have sunk, such things can often be easily put right by carefully levering up the pipes and wedging them to the proper elevation. In conclusion, the subject in its many bearings may be thought worthy of further discussion in order to shed all possible light upon the burning question.—K., Dublin.

Will Fruit Drying Pay?

IT seems almost incredible that a little country like this, teeming with population, produces in a season of plenty more fruit of certain kinds than can be disposed of by the grower at a profit to himself. Yet the fact remains, and deplorable though this waste is, tons of wholesome fruit last year fell from the trees because it would not pay to pick. I do not intend going into the cause of this, but doubtless our means of distribution are bad, as there are people enough in the country to consume all the fruit that is grown in the best of seasons, if they could only be put in touch with it. How to prevent the repetition of this waste of good material is a matter worthy of the attention of practical men, and various ways and means have been suggested already.

The headline of these notes indicates the character of one of them, and though the utility of drying fruit has been discussed frequently, it does not appear to have advanced much further. It seems, however, that a few people have been putting the matter to a practical test, and one of them is Mr. James Harper, Stroud, Gloucestershire, who recently gave his experiences and impressions in an interesting letter which appeared in the "Kent Messenger." As the matter is one of interest to many readers of the *Journal of Horticulture*, I take the liberty of quoting from Mr. Harper's communication with a view to raising a discussion as to the practicability of fruit drying as a home industry.

The writer appears to have been prompted, in the first place, by a desire to deal with fruit in seasons of glut, in a more satisfactory way than selling it at a ruinously low price or allowing it to rot on the ground, and this led him to inquire what method the foreigner has of dealing with gluts as they occur. He also argued that in regard to Apples, no matter how good the culture might be, there would be large fruits and small ones, and learned that the American way of disposing of the latter is to turn them into "pippins" or "rings" by a drying process. Mr. Harper suggested the process to some of his fruit growing friends, but was met with the replies, "'T would be a lot of bother; 't would never pay, &c.," and then, to prove the matter for himself, he decided to make the experiment. He obtained a Waas evaporator and, judging from the following remarks, his experience up to the present must be of a satisfactory nature.

"I have dried all kinds of Plums, Damsons, Apples, stewing Pears, French Beans, Cabbages, &c. I have not had a single experiment go wrong, and can say that ordinary average intelligence only is necessary to insure most successful results."

The following interesting particulars are then given:—

"*Apples*.—Dried into pippins. Original cost 3s. per cwt. of good culinary sorts. When dried they are one-eighth original weight. This increases the cost to 24s. per cwt., or 2.57d. per lb. Similar Pippins from America are said to be worth now 5d. per lb.

"*Plums*.—Original cost 2s. 6d. per 'pot of 90 lbs.;' sort, Blaisdon, red; when dried (with stones in) are one-third original weight. This increases the cost to 1d. per lb. Similar Californian Plums are worth wholesale 4½d. per lb. French (in bottles), 9d. per lb.

"*Damsons*.—Cost 2s. per cwt.; dry out to one-third original weight. This increases the cost to 6s. per cwt., or 0.64d. per lb. No foreign Damsons are sent here so far as I know. Stewing Pears, Catillac, &c., show very good results."

After giving various particulars respecting labour, fuel, storage, and packing, the experimentalist sums up his impressions as follows:—

"(a) That so far as I have gone, fruit and vegetable drying is not only possible, but easy; (b) that in comparison with the prices of foreign productions the industry would show a very reasonable profit; (c) that in fruits a market already exists that the quality that may be produced in England could easily supply; (d) that in vegetables for soups and seasonings a market is already at our hand, which native productions can supply; (e) that £25 is enough for a small farmer to pay for a plant for preparing and drying his produce; (f) this would enable him to deal with 400 lbs. of produce per day; (g) £185 to £200 for a larger establishment is all the outlay necessary for a complete plant capable of dealing with from 5000 to 6000 lbs. of fresh produce per day; (h) that the intelligence of our farmers ought to be equal to seeing the reasonableness of the idea of thus conserving the waste that is so prevalent when Nature is more bounteous than usual."

This appears to be the extent of the experiment so far, as Mr. Harper states that he has not yet placed his productions on the market. As regards prices, however, he writes hopefully, and if this all-important item is satisfactory the drying method suggests itself as being more economical than letting wholesome fruit waste.—G. H. H.



Cattleya Prince of Wales.

IT is some eight or nine years ago since *Cattleya Prince of Wales* was added to the list of hybrids, but it does not follow that it has found its way into every collection. It is said to be the result of a cross between *Cattleya Mossiæ Wagneri* and *C. calumata*. The plant shows characters that might be considered intermediate between the two parents; and there is no question that it is a delightful flower. The sepals and petals are pure white, as also is the lip, with the exception of a series of pale rose veins in the centre, and a finely frilled margin.

It was first shown by Messrs. F. Sander & Co., and was awarded a first-class certificate by the Orchid Committee of the Royal Horticultural Society.

We trust this information will satisfy "R. J. B.," who writes on the subject.

West's Extract of Nicotine.

FROM being one of the most unpleasant operations connected with gardening, fumigating of glass houses is rapidly becoming one of the easiest. At first some of the compounds sold for vapourising—as distinct from burning tobacco paper or rag—were out of the reach of many by reason of their high price, but the proprietors of this useful and excellent preparation claim for it, and rightly, that it is as near perfection as possible, at the same time being cheap. Low price does not always mean cheapness, but the extract of nicotine put up by the Leeds Orchid Company of Roundhay, Leeds, is not only cheap, but safe and effective.

Its safety lies in the fact that it is pure nicotine without

any deleterious foreign substance, and one might say that its effectiveness is also due to the same cause. That it is effective we have proved by using a small sample bottle in a house containing almost double the cubic capacity the said bottle is recommended for, and notwithstanding this, and the fact that the evening when it was used was clear and frosty, and most of the plants low down in the house, there was not a vestige of insect life in the morning.

Besides the usual occupants of the house a few late flowering *Chrysanthemums* were put in that were rather badly infested with

the troublesome black aphids, the insects being snugly ensconced among the florets, where they were naturally protected from the fumes. But here, as elsewhere, all were killed, as was found by pulling a flower to pieces. This preparation can be strongly recommended to growers of Orchids and other plants that are easily injured by fumigating, as they will save both money and trouble by its use. A neat and handy fumigator is sold with it at quite a nominal price, and anyone who, with such an aid to culture, almost for the asking, persists in practising obsolete and dangerous methods, has

only himself to thank if his plants go wrong. In addition to the fumigator arrangements and appliances the company send out quite a number of excellent sundries for use in Orchid and other houses. All are neat and inexpensive, and excellent for their several purposes, but lack of space prevents a detailed description of them being given.

A White *Vanda cœrulea*.

THERE is now in flower at the gardens of the Agri-Horticultural Society of India an almost pure white variety of this lovely Orchid. The spray is a fine one, and the flowers are identical in size with *V. cœrulea*, except that they are white with a very faint tinge of colour, which is scarcely perceptible. The plant is believed to be a native of the North Cachar hills.—("Indian Gardening.")



CATTLEYA PRINCE OF WALES.

Wild Flowers of Old English Gardens.—III.

AMONGST the minor results of the mild and sunny autumn of 1900 was the blossoming of the common Sweet Violet, which put forth numerous flowers both in gardens and its wild haunts. A bad prognostic, our ancestors would have said, since they had a belief that Violets in autumn foretold much illness during the next year. Here and there a few flowers appeared on the familiar Primrose, but this is not so ready to bloom late as is the Violet. Both these popular flowers have been mercilessly raided for some years past; the garden adornment which is aimed at being often unaccomplished, since wild plants dug up while in flower and hastily planted are apt to die off, hence there is scarcely a lane near any town in which we can find a Violet, or a copse that will now yield a Primrose. Yet possibly another cause operates in making Primroses less numerous.

Every gardener knows how sparrows attack the flower buds of Crocuses, though it is not agreed whether they are led to this act by a liking for the nectar of the plant, or open them in pursuit of insects. Darwin was, I believe, the first to state that the increase of Primroses was checked by birds biting off the immature flowers, and other observers witnessed to the fact. The common sparrow was not the only transgressor, or, if it is the worst, other birds, such as the blackbird and chaffinch, have destroyed the flowers; one friend conjectures that the blackbird is attracted by their subacid flavour when he cannot get fruit. Again, persons have examined Primroses for insects, and found none in flower or scape; and other people, living where they grow freely, have never seen a bird touch them.

Thus the matter remains doubtful, but we can have no doubt that the Primrose became a garden flower during the middle ages; indeed, probably came up self-sown in some, when it was more abundant as a wild flower than it is now. Primrose, as written, is quite 300 years old or more, but it is a corruption of the original "prymorolle," an Anglo-Saxon name, referring to its appearance in the spring. (It is true our ancestors used the name "Rose" inexactly, applying it to plants not of the Rose family, still it never belonged to the Primrose). But the earliness of this flower seems to have been specially noted. "It blooms in April, sometimes in March or February," wrote an author of the sixteenth century, though really the Primrose is preceded by the Violet and Snowdrop; possibly they were less frequently noticed as spring pioneers. Milton, however, who is generally correct in his observations upon Nature, associates May with "the yellow Cowslip and the pale Primrose;" but we now think them nearly over when that month arrives. Also, in the reign of Elizabeth, Lyte mentions Primroses, Cowslips, and Oxlips. The last name is noteworthy, showing that the plant had been recognised then, although it was not discussed whether it was a true species, a variety, or a hybrid between the Cowslip and the Primrose.

Various references to the Primrose indicate that during the seventeenth century gardeners took pleasure in trying for varieties. Parkinson fancied he had obtained twenty-one kinds, and Gilbert says that a friend near Chester sent him many different seedlings. We may conjecture that amongst these were plants we should call Polyanthus. Some, however, assert that the first Polyanthus, whether a variety of the Primrose or distinct, came to us from France. Curtis remarks that he saw in a garden at Maze Hill, Greenwich, descendants of wild Primroses that were, in all but colour, perfect Polyanthus. This is evident, anyhow, that if it came from the Primrose this flower does not tend to return to the original type. Eighty years ago Loudon reckoned nine good varieties of the common Primrose, mostly double; two of the best were the Hose-in-hose and a purple. Double-headed Primroses have been found wild and raised also in gardens, two corollas being enclosed within one calyx; and, still more curious, triple flowers having a fourteen-lobed corolla, the like number of stamens, and three pistils, two of them joined.

The Cowslip was quite as popular in old gardens as was its relative the Primrose, indeed perhaps more, because though very abundant along some meadows that were its haunts, it could hardly be called generally common. Then, again, gardeners set to work trying to produce big trusses of the flowers which would make a show along the beds during spring. Of course they raised double flowers and some of varied colours. Gibbs, formerly a nurseryman at Old Brompton, occupying land now covered with big mansions, made a great display of seedlings in 1818. The darker specimens received much praise, and some Hose-in-hose. It was noted that all his plants were quite distinct from the Primrose and the Oxlip. The latter never had much cultivation, hence few varieties have been produced. If not a hybrid from them, as Sir J. E. Smith observes, it shows peculiarities of both Primrose and Cowslip. From bogs or pastures about the north of England or Scotland people transplanted the pretty Bird's-eye Primrose (*Primula farinosa*), at once recognisable by its powdery stem and foliage, its small flowers growing in a

cluster; pale lilac or rosy occasionally. It has a scent somewhat like that of the Auricula. The Scotch Primrose (*P. scotica*), still smaller, and a sea-coast plant, also mealy, with darker flowers, has not yet made itself at home in our gardens.

Probably former notions of the economic value of the Cowslip and the Primrose encouraged their cultivation, but these have nearly vanished now, though I believe some folks keep up the custom of making Cowslip wine. It is not very long ago since a trade was done in the corollas, locally "pips," of the Cowslip, a tea or infusion being esteemed a remedy for fevers and paralysis; the wine was also sometimes used as a medicine. It is stated, too, that when Lettuces were scarce, Cowslip leaves entered into the composition of spring salads. The old village name of Paigle or Peggle is obscure, but is presumed to have reference to the medical virtues of the Cowslip, which was also oddly called the "petit Mullein." From the Primrose, again, a salve was prepared that had considerable repute.

Nearly related to the Primroses are the true Pimpernels. This French name, also written Pimpinel, has been vaguely applied to some plants very different. Several Pimpernels have been a good while in our gardens; the scarlet species indeed, one of our few wild flowers of that colour, appears now and then as a weed. Probably our ancestors did not too hastily remove it, since the plant is the Shepherd's Weatherglass, and from repeated observations I can testify that its morning indications are quite reliable; it is one of Nature's barometers. Should the flowers be open early there is no fear of rain for some hours, but soon after midday the scarlet Pimpernel closes. Also, in the olden time, it was said to be of use against witchcraft. Some people think that the blue Pimpernel, *Anagallis cœrulea*, a species still a favourite, was first grown in gardens from foreign seed, but we have reliable evidence that it formerly occurred near London, at Stockwell and Camberwell, where it probably attracted the notice of local gardeners. It is found now growing wild in a few places, though it has become rare about England. Our curious and pretty bog species of Pimpernel, which has occurred in Epping Forest, was at one time of some interest to Continental botanists as little known there except in a few southern districts. I am not sure that it has been ever tried as a garden plant, but it might succeed.

Again, in the genus *Lysimachia*, also in the Primrose order, we have some wild flowers which have become familiar, though but humble, garden plants. One of these is the Wood Loosestrife or yellow Pimpernel, not unfrequent about moist woods, with solitary golden yellow flowers, having a creeping stem; one of our earlier gardeners styles it a very elegant plant. We note that the name of Loosestrife is given to species of this genus, as well as to some belonging to a quite different order. More showy and of upright growth, the Great Loosestrife (*L. vulgaris*) might well be introduced into gardens, but it does not succeed except on a damp soil; London clay is in its favour. It was found both on the Thames and Lea near the metropolis. It is likely, however, that this plant was cultivated partly from belief in its curative powers, said to have been discovered by Lysimachus, King of Sicily. Also, it was believed to control fidgety horses, when some of its leaves were placed under the saddle or harness. Who does not at once recognise the Moneywort (*L. nummularia*) though many may not have seen it wild in meadows or damp woods? We notice it about London in pots and window-boxes, filling up a corner in a small garden, or spreading over a bank in a larger one. The flower is slightly bell-shaped, but when you come upon one fully expanded, it is nearly the size of a sovereign, and evidently our ancestors compared it to a gold coin, or copper, for it had also the name of Herb Twopence. It is more commonly propagated by division than by seed.

We have a somewhat singular plant grouped by botanists with the Primroses, and very popular at present—the Cyclamen—but they are not agreed whether we own one truly British species. Possibly, as some suggest, it was first a garden plant introduced from the Continent, then escaped from cultivation, though certainly it does not appear a very likely species to distribute itself. The Ivy-leaved Cyclamen, *C. hederifolium*, has been in Kent, Suffolk, and the far West of England, flowering about September when wild. It is remarkable for its beautifully variegated leaves, which are purplish underneath, flowers white or pinkish; the thick acrid root is eaten and relished by swine in countries where it is abundant.—J. R. S. C.

The Advantages of Fog.—According to a meteorological expert there is a bright side of fog. Recent researches, he writes, into the composition of fogs have led some authorities to suppose that these sable visitants are not altogether baneful in their effects, and it has been pointed out that the atoms of carbon and sulphur act as disinfectants and deodorisers. To most people these atmospheric antiseptics are worse than the disease, and horticulturists will require a considerable amount of proof before they will acknowledge the utility of fogs as far as plant life is concerned.

Late Grapes.

RELATIVE to the discussion that has taken place in our columns in relation to late Grapes, Mr. Ross, Downside Gardens, Bristol, sends us the accompanying photograph of two bunches of Grapes which he exhibited at a meeting of the Bristol Gardeners' Association a few weeks ago. The varieties represent Mrs. Pince on the left and Black Alicante on the right, and for these Mr. Ross received the bronze Flora medal of the Royal Horticultural Society.

WE have so many good varieties of late Grapes that early forcing is not essential. There is, however, much difference in the keeping qualities of Grapes. Black Hamburgs, for instance, will not remain in good condition nearly so well ripened in a cool house or very late as when the Grapes are brought to a high finish by fire heat when there is sun or light to secure a high development of the saccharine matter so characteristic of high quality and known long-keeping properties. Muscat of Alexandria is a notable

for some time, springs all at once into prominence. Its appearance is good, and is an earlier type of Gros Colman, and in keeping qualities not going beyond Black Alicante, say February. The great merit of Gros Maroc is that of its fine appearance, and in not requiring more heat than a Black Hamburg. For quality, West's St. Peter's, not so often seen as it deserves, is good, and though not so imposing in bunch or berry as many, it is very taking when well done, and always pleases at table those who like something in a Grape beyond appearance. It is one of the best Grapes for keeping to February.

Gros Colman is perhaps the most magnificent in appearance of all Grapes. In bunches of 4 lbs. weight, and berries 4 inches in circumference, and in its best form it is simply superb. Well ripened and allowed time to mature, it loses much of that earthy taste so characteristic of this variety. It requires a longer time and stronger heat to finish it satisfactorily than the majority of late Grapes. Gros Guillaume is little inferior to Gros Colman in appearance. It surpasses it in size of bunch, and the berries are little less in size, and it is very much better in quality. It requires time in ripening, and shows soonest of any Grape we know the evil effects of overcropping, not only not colouring, but even not



MR. ROSS' LATE GRAPES AT BRISTOL.

example of this, for unless its berries are ripened up to an amber colour they are almost certain to spot, and worse still, to decay at their junction with the shank when the weather is damp, whilst if the atmosphere is kept dry the berries lose moisture and shrivel, never again to be restored to their former plumpness.

All Grapes owe their keeping to thorough ripening under the influence of sun and strong heat. Of late Grapes we consider Lady Downe's the most valuable. It is a free bearer, and the fruit is of a quality simply unapproached in late Grapes, for when well ripened it has the Muscat flavour nearly as highly developed as in Mrs. Pince, and the keeping qualities of Lady Downe's are unsurpassed, keeping excellently up to May or even June. Mrs. Pince, if we only knew how to get the berries to ripen thoroughly and colour to the shank, would be a very great rival, indeed it would be hard to say which would win. Neither is very large either in bunch or berry, but they have quality which no other late Grape possesses in the remotest degree. Some have size, colour, and some are sweet, but they have, on the palate of those accustomed to high quality fruit, a most disagreeable earthy taste. Alicante is free from this defect, is an excellent keeper, and invariably finishes well.

Gros Maroc is one of those Grapes that, after being little noticed

ripening. Of late white Grapes, Trebbiano is perhaps the best. It is coarse generally, but well ripened the flesh is firm, crisp, sweet, and requires well thinning and time to ripen. Syrian has very large bunches, a thick skin, and ripened in a strong heat is not bad in flavour. Calabrian Raisin has large bunches, is sweet when well ripened, and the berries a good size when thinned. The raiser of a white Grape having the quality and keeping of Lady Downe's would have no further need of the blue apron. With the above or other varieties to maintain the supply of Grapes up to May, the necessity of starting permanently planted out Vines does not arise. This is a great advantage to the Vines and to the grower from an economic point of view.—A. G.

Mr. Ross makes the following remarks:—"I have read with much interest the article on 'Late Keeping Grapes' by your correspondent, 'H. D.' on November 29th. I quite agree with him that Mrs. Pince is a valuable late Grape of excellent flavour, as I have grown it for fifteen years very successfully. I find no difficulty about its setting qualities, and it keeps in good condition until March. I have now over twenty bunches, quite fresh and plump in berry, as the accompanying illustration will show."

The Structure of Wood.

THE internal structure of plants is not strictly within the province of the gardener, who is interested almost exclusively in roots, flowers, foliage, and fruit. He finds it necessary to become acquainted with the minute structure of the flower, especially in cases where he is unacquainted with the name of a plant, when he is guided by the arrangement of sepals, petals, stamens, and pistil to the natural order, genus, and finally to the species. Moreover, before he can study the structure of the woody stem of any of the tenants of his garden it must either be mutilated or cut down. It is not altogether a far fetched idea that the structure of wood may be of use to a gardener, because after the fall of the leaf a strange tree may be difficult to identify, and a section taken from a branch may materially assist him in referring it to its species.

Everyone must be familiar with certain aspects of wood, the rings which appear on a transverse section which indicate the annual addition to the bulk of a tree; the rays which, proceeding from the pith, resemble the threads of a spider's web, and which appear as the "silver" grain in the plank; and the pores that make some woods look coarse or, as it is termed, "open grained." If examined each of these elements will be seen to be arranged in definite form, varying infinitely in size and relation to each other in different kinds of wood, but practically constant in the same species. If we ignore the variation in the breadth of the rings, which is dependent on the vigour of growth from time to time, we shall find that the rays, pores, and rings arrange themselves in different patterns or designs as it were, which may be recognised with a little practice. To do this it is necessary to carefully smooth the surface of the wood with a sharp knife or plane, and in cases where the pores are extremely minute a fine shaving must be cut sufficiently thin to be semi-transparent, an easy matter if an iron plane be used.

Take, as the most familiar example, a piece of Oak, and observe that there are two kinds of rays, some conspicuous and others extremely fine, and that between them and almost parallel to them are branching lines of minute pores. In most Oaks there is also a prominent ring or band of very large pores as in our native species, but whether it lacks this latter feature or not, the wood which possesses the characters mentioned is an Oak of some sort. Beech may be told by the presence of rather prominent brown rays which do not run for long distances like that of the Oak, but cross a few of the annual rings only and taper to a sharp point at each end, always regarding them upon the surface of a cross or transverse section. Hornbeam has an arrangement of the smaller pores recalling that of the Oak, and also rays of various sizes, but the larger ones are not simple, but are obviously made up of a number of the small white rays crowded together, in addition to which the outline of the rings is very boldly waved. Some Oaks have wavy rings when young, but they become obliterated and rounded off with age, whilst those of the Hornbeam become more accentuated towards the outside of the stem. One may conclude from this that the Hornbeam is related to the Oak, just as one might do from a comparison of the fruit or flowers.

The tissue of the Elm is really most beautiful. The smaller pores, which run concentrically between the bands of large pores indicating the spring wood, form undulating lines and angles, sometimes continuous, sometimes broken, but always marking a delicate tracery. The Elms are extremely uniform in structure and cannot be mistaken, but to differentiate between one Elm and another by the character of the wood requires considerable familiarity with each species and the use of the microscope.

The Maples are another group in which scarcely any specific differences can be detected, as they all have minute pores evenly scattered over the breadth of the ring and enclosed in sharply defined compartments, as it were, by the narrow, but very clear, straight rays, which latter often produce an ornamental silver grain in the plank.

There is another character of importance to which I have not yet referred—*i.e.*, a certain kind of soft tissue composed of larger and looser elements than the ground tissue of the wood, and which makes its appearance as lines, patches, and zones in great variety. All the woody plants of the Pea-flower family exhibit this, as may be seen in the stems of the Gorse, the Broom, or the Laburnum, where a kind of cruciform pattern will be observed amongst which the pores are set. The Acacia or Robinia shows this very beautifully in its brown, or greenish-brown, heartwood, and it is worth sacrificing just a small branch to observe it. A fifth character of lesser moment is the presence or absence of small brown patches or flakes. These are the result of an effort of the tree to heal the wounds caused by grubs which live beneath the bark, failing which those trees whose wood is toothsome to the beetle tribe would never produce anything but timber riddled with holes. They may be seen in such woods as Birch,

Alder, Blackthorn and Hawthorn, and sometimes gives rise to a multitude of false rays which proceed in a brush-like fashion from the outer side of the flake.

It must not be assumed that because certain woody plants have a family likeness in their timber that there exists a means of classification by their structure. The science is by no means so far advanced, and the presence of conspicuous differences in the same tribe make anything except an artificial classification impossible at present, but perhaps a little order may be arrived at by-and-bye. We may, however, draw a few broad distinctions, as between the Conifers and the broad-leaved trees, which hold good throughout. The wood of the Conifers never possesses true pores or vessels, though many have pores of a different kind, called Resin pores. These latter are usually more sparing in their numbers than true pores, and are always more numerous in the summer and autumn zones than in the spring wood or inner edge of each annual ring. In the broad-leaved trees, on the contrary, although the pores may be evenly scattered throughout the breadth of each ring in certain cases, they are never more numerous in the outer portion of the ring than in the inner. The structure of the wood of the Conifers is very simple, and hence provides few distinctions which can be employed to distinguish one kind from another. Amongst the Pines, for example, it is almost hopeless. The rays are almost always extremely fine, the ground tissue is very uniform, and the pore tracery and patches of soft tissue, which aid us so much in many other natural orders, is always absent. The wood of Palms being endogenous, is readily distinguished from either exogens or Conifers. There is a complete absence of the radial or concentric appearance of the wood, of the two latter an irregular mass of isolated bundles is present instead, as will be seen on cutting any cane or bamboo.

If a piece of the wood of a Conifer or broad-leaved tree be cut in a vertical direction, or plankwise as it is called, we get two different forms of structure, one if the cut be across the centre of the tree in the plane of the rays, and another if cut away from the centre at right angles to the rays and tangentially with the rings. In the first case the familiar silver grain, which is caused by fragments of the rays remaining on the surface, is seen, and in the second the ends of the rays only are visible, hence variation in the direction of the cut may produce any combination between these two forms, so that usually no two planks cut from a tree exactly resemble each other. Hence it requires long experience to tell the names of even our common timbers by their appearance in the plank. The pore-rings in the spring wood show up as bands of more or less coarse scratches and the rays as lines of varying depth. In the Beech we see them as shallow brown flakes which diminish to tiny lines as the section becomes more at right angles to them, while in the Oak they may be anything from deep lines inches long to broad deep plates of shining silver grain. All of these points have their value as specific characters, though there is no section that gives us as much information as the cross section, which in many cases suffices alone.—HERBERT STONE, F.L.S.

On Soil and Manure.

THE spring is at hand, and a corresponding amount of interest will soon be felt by all parties concerned in the culture of the soil. Gardening has made very rapid strides of recent years, its professors being great readers, and horticultural literature has been doing its best to keep pace with the spirit of the times in satisfying these readers' demands. To these growers I would point out some important aspects in relation to soil. There has latterly been much attention paid to the question of the food of plants. This has led to scientific investigation as to the relative merits of manures, and we have seen results which our ancestors would have deemed miraculous.

Still a vital point connected with the permanent amelioration of the soil lies in the background—*viz.*, the improvement of the mechanical texture of soils or the improvement of their staple. This is the grand basis of all improvement, to which even the employment of manure is a subordinate matter. As in the making of good pastry, so in the treatment of soil, the working of the material counts for as much and, sometimes, even more than the prodigal addition of rich ingredients. The raising of the unexhausted elements of the subsoil, and the free admission of heat and air to assist decomposition, play a large part in the process, and, though they entail labour, must not be shirked on that account.

Everybody knows that open sandy soils are hungry soils; everybody also knows that it is little use multiplying the amount of manures in stagnant clays or boggy soils unless drained. Here, then, we come to the matter of mechanical texture, which is of vast importance. Thorough drainage must precede all attempts at improving the texture in the case of adhesive soils, whilst the sandy ones will

require a solidifying or retentive principle to be added to them, and this quite irrespective of the question of manure.

I would, moreover, impress upon the small and the amateur gardener the necessity of taking up all business promptly, and, if possible, in advance of the season. The working of the soil and the collection of manure, the cleaning of crops and the extirpation of weeds, must not be put off for other more agreeable employments. In the collection of manure the horticulturist should ever be indefatigable. Guano and other highly concentrated fertilisers are not within the reach of everybody, but there are other methods by which middens may be increased; and if in the frosty weather other work should flag, the busy man can always profitably direct his thoughts to the augmentation of the manure heap.—MAC.

Unprofitable Fruit Growing.

DURING these recent years of agricultural depression and unprofitable farming much has been said and written of means whereby the distressed tiller of the soil may revive his waning fortunes. Statisticians in the press have compiled striking tables showing the vast quantities of Apples imported into this country annually, the total value of which would almost make the revenue look foolish. All of this fruit, it has been pointed out, might be grown at home with beneficial pecuniary results to both producer and consumer, and the poor farmer has been accused of being old-fashioned, indifferent to his own interests, something more than dull-witted, and so attached to the old routine as pursued in more prosperous times by his forefathers as to be unwilling to forsake his conservatism and launch out into new and more remunerative speculations such as fruit growing.

Why, it has been frequently asked, does not the British farmer, instead of growing Wheat at prices that will never pay, and hay that will be scarcely worth the labour of cutting if the season be at all unfavourable, move with the times and plant some of his land with Apple trees, whereby he may gather year after year a rich harvest of fruit, which will soon place him far beyond all fear of poverty and bankruptcy? Why not? He is told on all hands that there is money in it, and in many cases it has proved a success, and so one fine day he determines he shall no longer be accused of want of enterprise, but will endeavour to divert some of the huge profits to be made out of fruit farming in his own direction. Forthwith he girds his loins and betakes himself to the nearest nurserymen, his chief qualification, in some instances, being his profound ignorance of all matters relating to fruit culture.

He is under the firm conviction that all that is necessary is to stick the trees in the ground and wait for them to turn themselves into money. You plant the tree and Nature does the rest, is his theory, and the first business obviously is to obtain the trees. If he has some knowledge of trees and the value of different varieties, well and good, but more or less frequently it is the case that the worthy agriculturist knows just as much of fruit trees as the trees know of him, one variety is the same as another; an Apple tree to him an Apple tree is and nothing more. No grower of any repute, whose business in life is to raise fruit trees with a view to disposing of them at a profit, would take advantage of his customer's ignorance to persuade him to purchase anything but clean, strong, healthy trees of the very best varieties, and in the selection of the trees themselves, and of the varieties the would-be grower is wise when he accepts what is recommended to him. At any rate, if the farmer only looks in the right place he can doubtless find that which is best for his particular purpose, and having bought his trees off he goes, and now they have only to be planted, and the farmer can stand and watch them turn themselves into money, as it has ere now been expressed.

Much has been said and written of the best method of planting, and numerous indeed are the rules and instructions laid down for those about to plant, but an enterprising farmer has no need of these. Has he not put in any number of gateposts, and perhaps even a beam to support the stable or cow-shed, and should he be told how to plant an Apple tree? All that is wanted is a man with a spade and a pair of substantial boots, and, orders given, the man with the spade commences in spirited fashion, and delves down through soil and subsoil with such mighty industry, that one might be led to inquire if he expected to strike a coal seam. The hole made, the roots and, as likely as not, a goodly proportion of the stem are crammed in, and without more ado back goes the soil, stones, gravel, clay, or what not, and, for fear the tree should suddenly develop powers of locomotion, first the back of the spade and then the feet of the planter are requisitioned to make solid and doubly solid the soil round about, till it appears that nothing short of a full grown earthquake could ever disturb its foundations, and then the tree is safely started on the way towards making money, or firewood; probably the latter.

With regard to pruning there are two systems; one is not to prune at all, the other is to clip the tree symmetrically all round, as though lessons had been taken in a hairdresser's shop. Whichever manner is adopted, the results are, of course, eminently unsatisfactory; and another individual is to be found who will mournfully assert that fruit growing for farmers is a hopeless failure—there is really no money in it.—A. W. D.

Eucharis amazonica.

THIS plant has become most deservedly popular during the past few years. A walk at this season through the grand row of Covent Garden Market would be sufficient to prove the fact, even to those who have no opportunities for seeing and knowing the extent to which the plant is grown in private establishments. It is scarcely possible to conceive a more beautiful object for vases, or for the centre of a hand bouquet; I am particular in saying the centre, because, except in a large bouquet, the flowers are too large for other places, but if a large and massive bouquet is to be made, they have a beautiful effect as an outer edge.

The *Eucharis* is a genus of *Amaryllidaceæ* containing few species, the one under notice being perhaps the most beautiful and useful of the whole family, although I hold *E. candida* in great estimation on account of its producing smaller blooms; it is even more useful for bouquet making than *E. amazonica*, but as a plant it lacks that majestic appearance which is such a distinguishing character of the latter species.

Eucharis amazonica is a native of the low moist regions on the borders of the river Amazon, and upon this knowledge of its natural habit I base my treatment; for if the plant inhabits such places in a state of nature, the roots will seldom or never become dry at any season. I have grown this plant in considerable quantities, both as large specimens and as small plants suitable for placing in ornamental vases for the embellishment of the drawing-room and boudoir, and under my system they have proved almost perpetual bloomers. Although I cannot agree with those who practise the driving-off system, it is undeniable that plants so treated produce good crops of flowers; I maintain, however, that those plants will never prove such perpetual bloomers as mine; and, moreover, that my plants not only produce a much greater number of flowers during the season, but they are always handsome and presentable—a feature which cannot be claimed by those who put them to rest at certain periods.

The soil for the successful culture of *E. amazonica* should be turfy loam, fibrous peat, and good, rich, but thoroughly decomposed manure in about equal parts, to which must be added a fair proportion of sharp river sand. The plant enjoys liberal supplies of water and strong moist heat to any degree, therefore the drainage must be kept in thorough working order to prevent any stagnation. I am not an advocate for very much pot-room, but prefer renewing the surface soil, say once or twice during the season, and feeding the plants frequently with artificial manure, and by no means allowing them to suffer from the want of either heat or water. In order to maintain a succession of the noble Narciss-like flowers it will be well to place the plants as they pass out of bloom in a somewhat cool stove, or in some situation where the temperature is lower than that of the house in which they are grown; but do not keep them dry.

The bulbs of *Eucharis amazonica* must be planted below the soil. From these bulbs the leaves usually arise in pairs; they are ovate, spreading, somewhat fleshy or leathery in texture, from 12 to 18 inches long, and of a very dark green; the flower-spike is stout and erect, usually attaining the same height as the leaves, and bearing upon the summit some five or six delicately fragrant pure white flowers, which last a long time upon the plant. When cut and placed in water, and set in a vase with a few sprays of Maidenhair Fern, the flower is a gem of the first water, being at once chaste and effective.—C.

Names of Plants and Fruits.—Pomologists, like botanists, find it impossible to enforce the rules of priority in names of fruits and flowers. In fruits, the names of Bartlett for a Pear, and Telegraph for a Grape, have not been changed in spite of the efforts of leading pomologists and pomological societies to support prior names. Those who lead in these good efforts forget that the only law for language is the law of custom. In a famous grammar we are told "the English language requires the pronoun *it* for all inanimate objects; but custom has so firmly made the sun a *he*, and the moon a *she*, that we have to accept it." Thus it will ever be. To secure the adoption of a prior name, says Mr. Meehan, reformers must bestir themselves, before custom gets possession of the field.

Crowea saligna major.

CROWEAS, "W. Raby," are by no means new plants, they having been introduced to this country upwards of a century ago. A few years back most good collections of hardwooded plants contained one or more specimens, but such is not the case at present, it being the exception rather than the rule to see them. This is very unfortunate, as they are most useful and of the greatest floriferousness, blooms being seen at almost all times of the year. One of the finest varieties is *C. saligna major*. It is a form of *C. saligna*, which is a very useful, free-flowering and strong-growing plant; but the individual flowers are not so large as the variety named above. Another form, also with large flowers, is named *stricta*; but the colour is much lighter, being a pale delicate pink, while in *C. saligna major* it is a rich deep rose. The temperature of an ordinary greenhouse suits the croweas very well, and they are easily grown plants, succeeding in any fertile soil in well-drained pots.

Notes on Peas.

To maintain a constant supply of this most popular vegetable requires considerable judgment on the part of a gardener, particularly as it is seriously affected by the caprices of climate. This season we have had striking proof of this. The protracted drought and great heat of summer had much influence over the crop, inasmuch as it caused premature ripening of the straw of early Peas and brought the mid-season and late varieties on so quickly that in some cases they were all in at once, and the whole season only lasted a few weeks. To avert this as far as possible judgment is necessary in the proper preparation of the soil, successive periods of sowing, and the choosing of the best varieties.

The Peas most suitable for the dinner table are the best for exhibition, and they should be shown just when they are in the proper condition for cooking. A variety that is heavy cropping, produces large well filled pods of good-flavoured peas, is the best to grow for supplying the kitchen, and as a Pea of this character fills all the requirements of the exhibitor there is no need to make any discrimination between the two.

Some vegetables are subject to special treatment at the hands of exhibitors in order to get extraordinary specimens for the show table, but with Peas it is not so. The treatment that gives the best returns to the cultivator also results in the finest pods for show, so that in following out the most accurate details of culture, with soil and climate suitable, the advantages are mutual.

Frequent opportunities occur every season of marking the difference in crops of Peas. In some gardens the cropping period was infinitely short, but in another garden under exactly the same conditions of soil and weather, the crop was considerably heavier and lasted longer. The latter state of affairs may be traced to deep cultivation, for no vegetable pays better for deep and thorough working of the soil.

An excellent way of preparing Pea ground is to dig out trenches to a depth of a couple of feet and two spades wide. Place a layer of manure in the bottom, and fill up with alternate layers of soil and manure, adding a little loam from a pasture if obtainable. Several trenches may be prepared in this way

during the early months of the year, and the sowings take place in succession.

The ambition of everyone who has a kitchen to supply is to get Peas as early as possible in the season, and keep this up as long as is practical. Artificial forcing of this vegetable has not taken the attention of gardeners to any extent, but whether this will be so in the future is an open question. An old and common mode of forcing is that of sowing Peas at the end of January or early in February in pots or turves, cut into small squares, and placing them in a heated pit or hotbed frame. They must be kept close to the glass or they will become drawn and weakly, and after being gradually hardened they should be planted in the permanent quarters in April, by which means Peas may often be gathered a week or so earlier than if sown in the open ground. In some favourable districts a little time is gained by sowing in November, but the risks are too great to be generally recommended.

A south border having the shelter of a wall is the place for early Peas, the sowing of which may take place during favourable weather in January, having previously made the soil friable by thorough working and free use of well-decayed manure. It is an open question which is the better to sow for the first crop—an early dwarf variety like *Chelsea Gem* or *English Wonder*, or a taller grower such as *William I*. The last named is one of the best known Peas for early use, and has no superior; but if the border be a narrow one a dwarf grower will be more profitable, as the rows may be 2 feet apart, and if run parallel in a slanting direction, at an angle of about 60°, a longer length of row is obtained. Where mice are troublesome it is a good plan prior to sowing to wet the Peas and roll them in dry red lead. When the Peas appear they must be carefully watched and dusted with soot to prevent slugs, and also guarded against birds. As soon as they are a few inches above ground it is an excellent practice to draw up the earth to the row on each side, as this forms an excellent means of protection. In addition to those named, *Daisy*, *American Wonder*, and *William Hurst* are useful varieties.

For succession there must be sowings at intervals, and if *William I*. and *Ringleader* are sown about the same time as the dwarf varieties mentioned the whole will provide a good early supply. Other sowings of early and midseason varieties should be made in March, including *Stratagem*, *Veitch's Perfection*, and *Sharpe's Queen*. Some growers raise objections to the tall growing later sorts, but they are so prolific they cannot be dispensed with. *Telephone*, *No Plus Ultra*, and *Duke of Albany* form a capital trio, though it must be

remembered that to obtain the best pods, fit either for exhibition or table, abundance of room must be given between both rows and plants, and stout stakes provided, otherwise they become top-heavy. Attacks of mildew among Peas during the past season have been very common, in most cases the result of drought.

As a preventive deep cultivation to begin with and afterwards soakings of water or liquid manure are recommended, but after water has been given the rows should be mulched with strawy manure, litter, or short grass from the lawn, so as to conserve the moisture. Sulphide of potassium at the rate of half an ounce to a gallon of water, sprayed on affected parts, will destroy the mildew, but when once Peas are badly attacked they rarely recover fully.

Large pods for show are sometimes obtained by stopping the growth of the plant after the pods are formed, and then feeding with liquid or chemical manure; but if plain practical methods of culture are adopted pods quite capable of winning a first prize may be picked from the row that is supplying the kitchen.—G. J.



CROWEA SALIGNA MAJOR.

NOTES & NOTICES

Recent Weather in London.—Londoners have had a touch of real winter during the past few days. On Sunday the wind blew strongly from the north-east, and brought with it a suspicion of snow; it was bitterly cold. On Monday snow fell for several hours, and slight frost with a cold wind continued the whole of the day. On Tuesday snow fell heavily. Wednesday opened frosty, with indications of fog.

Weather in the North.—There was for the first few days of the year a cessation of the accustomed rain, and there was a sharp frost on the morning of Sunday with dense rime. Rain again began during Monday night, and Tuesday was cold with sleety showers.—B. D., *S. Perthshire*.

"My Garden Diary."—Under this title Messrs. Sutton & Sons, of Reading, have put forth a very artistic combination of horticultural calendar and note-book in connection with gardening operations. The designs upon the covers are especially attractive, and do great credit to the taste of the publishers; indeed, it would serve as a conspicuous ornament on any drawing-room table.

Horticultural Club.—Our older readers will be pleased to hear that a wish having been expressed that, in recognition of the twenty-six years' valuable services of the Rev. H. H. D'Ombrian as the founder and only secretary of this society, his portrait should be hung in the club room, and Mr. D'Ombrian having consented to sit, it has been decided to ask Miss Rivers of Sawbridgeworth, who painted the portrait of the late Dr. Hogg, to accept the commission. The subscription is limited to one guinea.

Barrister's War Experience.—At the Derbyshire Quarter Sessions, Mr. Hole, son of Dean Hole, and Mr. Tonman Mosley, barristers, were heartily welcomed on putting in their first professional appearance since their return from the front, where they served with the C.I.V. Mr. Hole, in thanking the magistrates for their congratulations, recalled the fact that the last time he was in a court of justice he was 7000 miles from Derby, and occupied a position in the dock on a charge of being an English spy within the Republican lines.

Royal Meteorological Society.—The annual general meeting of the society will be held at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday, the 16th inst., at 7.45 P.M., when the report of the council will be read, the election of officers and council for the ensuing year will take place, and the president (Dr. C. Theodore Williams) will deliver an address on "The Climate of Norway and its Factors," which will be illustrated by lantern slides. The above meeting will be preceded by an ordinary meeting, which will commence at 7.30 P.M.

Royal Horticultural Society.—The first meeting of the committees of the Royal Horticultural Society in 1901 will be held as usual in the Drill Hall, Buckingham Gate, Westminster, on Tuesday next, January 15th. A paper on "Recent Developments in the Treatment of Diseases and Insects Injurious to Orchard Crops," by Professor Beach, U.S.A., will be read at three o'clock. The Scientific Committee will meet at 4 P.M. To prevent misunderstanding it may be mentioned that the committees of 1900 do not vacate office until the date of the annual meeting 1901, and in like manner all Fellows' tickets of 1900 are available until February 12th, 1901.

The Horticultural Directory.—This most useful publication for the present year is now ready, and, as usual, it contains a rich fund of information that will be found valuable to everyone interested in gardening. In addition to tables on various subjects for gardeners, it comprises within its 550 pages garden receipts, a list of the plants certificated by the Royal Horticultural Society during the past year, lists of nurserymen, seedsmen, and florists in the metropolitan area and throughout the whole of the British Isles, county list of the principal estates with their gardeners, lists of the Covent Garden salesmen, the chief botanical and horticultural societies in the kingdom, as well as much other kindred matter of equal interest and value. The price is 1s. 3d., post free, from the publisher, 12, Mitre Court Chambers, Fleet Street, London, E.C.

Metropolitan Public Gardens Association.—At the monthly meeting of the association, 83, Lancaster Gate, W., the draft of the eighteenth annual report was approved. It showed that the income for the past year, amounting to £4400, was considerably less than that received in 1899. The expenditure was £4200. Four new grounds have been laid out and opened, and assistance has been rendered to a number of other schemes. An appeal was made for increased support during the year 1901.

Water Companies and Garden Watering.—Mr. G. M. Freeman, Q.C., and other Buckinghamshire magistrates at Slough recently heard a case of great importance to water consumers throughout the country. The Slough Water Company summoned Mr. Neal of Slough for £2 8s. water rate. Defendant admitted that £1 18s. was due, but disputed the remaining 10s. charged for a garden hose. The charge was specified in the company's regulations, but no agreement existed as to it between them and the defendant. The bench, therefore, gave judgment for the sum of £1 18s. only.

Gardeners' Royal Benevolent Institution.—The annual general meeting of this institution is fixed for Tuesday, 22nd inst., at Simpson's, Strand, when seventeen pensioners will be placed on the funds. The committee recommends Isaac Clark, William Cotton, William Craggs, John Eastwood, Thomas Gale, Elizabeth Harris, and Samuel Smith be placed upon the funds without election. There are thirty-three candidates for the remaining ten vacancies. There are 179 pensioners. The meeting will commence at three o'clock, under the presidency of Mr. H. J. Veitch. The annual friendly supper of this society will take place, after the annual general meeting, at Simpson's Hotel, at 6 P.M., when Alderman Robert Piper, of Worthing will preside.

"All About Sweet Peas."—This is the title of a small pamphlet that has been issued by the versatile Mr. Robert Sydenham of Birmingham, whose object is to popularise these beautiful and fragrant flowers. The cultivation of the plant is dealt with in a brief, but admirably written chapter, after which follows a descriptive list of some fourteen dozen varieties. As this is far too many for the generality of cultivators, Mr. Sydenham proceeds to give a selection of the best dozen, which comprises Blanche Burpee, Prima Donna, Admiration, Lady Mary Currie, Prince of Wales, Salopian, Lottie Hutchins, Queen Victoria, Lady Grisel Hamilton, Duke of Westminster, Navy Blue, and Black Knight. The price of this little book is 6d., and all the profits accruing from its sale, are, we understand, to be handed over to the Royal Gardeners' Orphan Fund.

The Cray's and Orpington Cottagers' and Gardeners' Mutual Improvement Association.—The members of the above had a most enjoyable evening on Wednesday, January 2nd, 1901, when Mr. H. Cannell, sen., of Swanley, gave an interesting lecture on "The Garden and its Worth." Mr. Cannell, in the course of his lengthy discourse, pointed out the inestimable benefits to be derived from the good culture of vegetables, fruit, and flowers, specially pointing out the value of the seed of White Czar Bean as an article of diet; cooked specimens being handed round, and duly tasted, were pronounced excellent. Mr. Cannell urged his audience not to be content with slipshod methods, but by thorough cultivation endeavour to get the best results obtainable. At the close of the lecture a very hearty vote of thanks was accorded to Mr. Cannell, and also to Mr. W. Beer, the hon. treasurer of the association, for presiding. An excellent collection of vegetables and fruit was exhibited by Mr. Cannell, in addition to exhibits from members.

Reading Gardeners' Mutual Improvement Association.—The annual general meeting of the Reading and District Gardeners Mutual Improvement Association was held at the Abbey Café on Monday, the 7th inst., and notwithstanding the very inclement weather there was a good attendance of members. The president, Mr. C. B. Stevens, occupied the chair for the first part of the meeting, vacating it later for Mr. Leonard G. Sutton, who was elected president for 1901. The other officers elected were—chairman, Mr. T. Neve; vice-chairman, Mr. H. Wilson; treasurer, Mr. F. Macdonald; librarian, Mr. E. J. Dore; assistant-librarian, Mr. F. W. Exler; auditors, Messrs. Badcock and A. Smith; committee, Messrs. A. W. Blake, F. Bright, R. Chamberlain, C. P. Cretchley, D. Dore, E. Fry, G. Hinton, W. Lees, F. Lever, E. S. Pigg, J. T. Powell, G. Smith, W. Smith, G. Stanton, W. Townsend, and J. Woolford; whilst Mr. H. G. Cox, "Fernlea," Junction Road, Reading, was re-elected hon. secretary. Mr. D. Dore staged three splendid heads of Sutton's Best of All Savoy. Two new members were elected.

Death of Mr. Charles Pilcher.—We learn with regret of the death of Mr. Chas. Pilcher, which took place at Wandsworth on December 29th. For many years the deceased was a prominent metropolitan gardener, and was in charge of Mr. Rucker's gardens on West Hill, Wandsworth, when these were famed far and wide for the collection of Orchids.

Liverpool Horticultural Association.—The system adopted of giving two separate papers on last Saturday evening was not quite to be commended. However, the lectures were admirable. Mr. T. Foster, the chairman of the association, presided, and introduced the late chairman, Mr. T. White of Aigburth, who spoke quite eloquently on the progress of horticulture, dealing with its literature and paying a high tribute to the long and useful career of the *Journal of Horticulture*. Hybridising, garden lore, in fact everything that had tended to the progress of horticulture, was introduced. The chairman expressed his pleasure at seeing the *Journal* representative in the room, and stated that he was one to take it from its commencement.

Isle of Wight.—Mr. S. Heaton, F.R.H.S., late technical instructor in horticulture to the Isle of Wight County Council, and who has recently been appointed to a similar position to the Oxfordshire County Council, was last week the recipient of a testimonial from the Isle of Wight Horticultural Improvement Association, of which Mr. Heaton was the organiser and hon. sec. for seven years. The association now numbers 400 members, and has done much useful work in the island. The presentation was made at the annual meeting of the association at the Newport Town Hall by the chairman, Dr. Groves, B.A., J.P., and consisted of the complete edition of twenty-five volumes of the "Encyclopædia Britannica" and an illuminated address, with the names of the subscribers to the testimonial.

Beckenham Horticultural Society.—On Friday last the members and friends of the Beckenham Horticultural Society met to listen to an essay, entitled "A Year's Work in a Vinery," by Mr. W. Taylor, gardener to C. Bayer, Esq., Tewkesbury Lodge, Forest Hill. After the chairman, Mr. Price, opening the meeting, Mr. Taylor proceeded. He described what he considered "an ideal vinery," its dimensions and situation, and assuming that he was dealing with established Vines, attention first was given to thoroughly cleansing the house itself, and then the Vines, removing the effete mulchings and surface soil. The essayist then dealt with the operations, such as syringing, damping, disbudding, tying down, stopping, assisting the setting, thinning the crops according to strength of Vine and variety, thinning and tying out the bunches, mulching borders with prepared stable manure to give off the beneficent ammonia. The essayist, in concluding, invited those present to "pull him to pieces." This was not attempted, for the critics were disarmed by the splendid exhibit of Alicante Grapes which confronted them as results of the practice detailed. After a long and useful discussion a very hearty vote of thanks was accorded Mr. Taylor. On the 18th Mr. Stanbridge will discourse on the popular Begonia Gloire de Lorraine.—T. C.

Chester Paxton Society.—At the Grosvenor Museum on Saturday a social gathering of the members and friends was held to inaugurate the opening of the winter session. By the kindness of Mr. and Mrs. Siddall, the officers and members of committee, together with wives, sat down to a sumptuous tea in the art gallery, after which an open meeting was held in the lecture theatre, where a goodly number of members was present. A well arranged programme of music was skilfully executed by Mrs. E. Gratton Lloyd, Mrs. Simon, Mrs. Miln, Miss Welch, the Misses Wells, and Messrs. Peters-Jones, John Weaver, and A. Ward. During a short interval in the programme the president of the society (Mr. N. F. Barnes), in the name of the committee and a few friends, presented Mr. John Taylor of Hoole with a handsome aneroid barometer bearing a suitable inscription on the occasion of his marriage. Mr. Taylor in returning thanks for what was to him a pleasant surprise, said that what he had done for the Paxton Society had always been a labour of love, and in fact the most pleasant work of his life. He also thanked the company for the welcome extended to his wife, which she most highly appreciated. On the initiative of Mr. Wakefield, seconded by Mr. Newstead, a hearty vote of thanks was accorded to the ladies and gentlemen who had taken part in the musical portion of the proceedings, and also to Mr. Siddall, who exhibited an interesting series of lantern pictures of the fruit and Chrysanthemum exhibition held at the Town Hall. Mr. G. P. Miln, the hon. sec., announced the names of eighteen new members, after which the meeting closed by the rendering of the National Anthem.

Croydon Horticultural Mutual Improvement Society.

The annual general meeting of members and subscribers will be held in the society's room, at the Sunflower Temperance Hotel, George Street, on Tuesday evening, January 15th, 1901, at 8 P.M., for the election of officers for the year, and other business.

January Flowers at Hodsock Priory.—The following list of plants in bloom here on January 1st will show the mildness of the season. Snowdrops and Aconites are not in bloom, and since the weather has taken on a cold spell they will not be in flower for some days yet. Anemone St. Brigid, Antirrhinum, Arabis alpinus, Cardamine rotundifolia, Chrysanthemum maximum, Chrysanthemum of sorts, Cyclamen Coum, Erigeron triloba, E. rosea, Geum coccineum, G. coccineum plenum, Iberis correaefolia, Polygala Chamæbuxus, Carnation, Roses of sorts, some fine blooms; Violets of sorts, Marigold, Honeysuckle, Primroses, double and single, every shade of colour; Crocus imperatus, bedding Violas of sorts, Sweet Coltsfoot, Grape Hyacinth, Helleborus niger, Helleborus orientalis of sorts, Groundsel, Scilla amœna, double and single Daisies, Jasminum nudiflorum and Clematis.—J. MALLENDER, *North Notts*.

Sussex Weather.—The total rainfall at Abbots Leigh, Haywards Heath, for December was 3.49 inches, being 0.70 inch above the average. The heaviest fall was 0.70 on the 30th; rain fell on twenty-three days. Total rainfall for the year 27.08 inches, — 2.67 inches below the average of twenty years. The maximum temperature was 54° on the 4th, 5th, and 12th; the minimum 28° on the 23rd. Mean maximum 49.07°, mean minimum 39.10°; mean temperature 44.08°, which is 5.60° above the average of twelve years.—R. I.

December Weather at Hodsock Priory.—Mean temperature of the month, 44.6°; maximum in the screen, 57.6° on the 20th; minimum in the screen, 27.4° on the 23rd; minimum on the grass, 17.2° on the 23rd. Number of frosts in the shade three, on the grass sixteen. Sunshine eighteen hours, or 8 per cent. of the possible duration. Rainfall 3.00 inches; difference from average, + 0.90 inch. Rain fell on twenty days; maximum fall, 1.08 inch on the 30th. Rain from January 1st, 27.10 inch; difference from average, + 1.82 inch. The warmest December since observation commenced here in 1876. The nights were especially mild, and the mean minimum is about what we generally get at the end of April.—J. MALLENDER, *Worksop*.

December Weather at Belvoir Castle.—The wind was in a south-west direction twenty-five days. The total rainfall was 4.10 inches; this fell on eighteen days, and is 2.02 inches above the average for the month; the greatest daily fall was 2.20 inches on the 30th. Barometer (corrected and reduced): highest reading, 30.427 inches on the 16th, at 9 P.M.; lowest reading, 28.738 inches, on the 28th, at 9 A.M. Thermometers: highest in the shade, 56° on the 20th; lowest, 23°, on the 23rd. Mean of daily maxima, 49.03°; mean of daily minima, 38.64°. Mean temperature of the month, 43.83°; lowest on the grass, 18°, on the 23rd; highest in the sun, 85°, on the 26th. Mean temperature of the earth at 3 feet (estimated, owing to error in the instrument), 44.50°. Total sunshine, 51 hours 55 min., which is nearly five hours above the average for the month. There were twelve sunless days. The very heavy rainfall on the 30th (2.20 inches) is most remarkable, the greatest amount recorded here in one day since 1876 is 1.56 inches on June 28th, 1892; the records previous to 1877 are imperfect.—W. H. DIVERS.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900—1901										
December.										
January.										
Sunday ..30	S.S.W.	deg. 45.6	deg. 44.9	deg. 52.0	deg. 33.9	ins. 0.62	deg. 42.7	deg. 45.8	deg. 48.3	deg. 25.0
Monday..31	E.N.E.	43.9	42.7	44.9	39.0	0.01	43.1	45.6	48.2	37.7
Tuesday 1	S.S.E.	37.0	35.6	39.7	36.6	—	42.9	45.6	48.1	35.5
Wed'sday 2	S.S.W.	33.2	32.9	44.6	33.2	—	42.9	45.5	48.1	32.2
Thursday 3	W.N.W.	34.5	33.2	40.1	30.0	—	41.1	45.2	48.0	22.5
Friday .. 4	E.N.E.	38.2	37.8	38.4	34.3	—	41.1	44.6	48.0	30.0
Saturday 5	E.N.E.	29.0	28.2	37.1	28.5	—	40.4	44.4	47.8	25.9
MEANS ..		37.3	36.5	42.4	33.6	Total 0.63	42.0	45.2	48.1	29.8

The weather during the latter part of the week was characterised by dense smoky fog and cold biting winds from the north and east.



Pear Doyenné du Comice.

I WAS quite aware that this Pear had received awards for cultural excellence from the Fruit Committee of the Royal Horticultural Society, but I have no knowledge of its having been presented to the committee for a certificate or an award of merit. I must, however, take exception to the assumption of Mr. Fewtrell that because the Glastonbury Pear (also Nouvelle Fulvie and Olivier des Serres) received first-class certificates they are necessarily equal in excellence to Doyenné du Comice. With all fruits thus honoured there must be varying degrees in excellence, and it is so in this case. I may be open to censure for saying in relation to large Pears that whilst such fruits have soft, succulent, and smooth flesh, this contains a superabundance of water, and further that fruits of less size, but not necessarily small, usually have higher or richer flavour, let the variety be what it may.—A. D.

Topiary Work at Elvaston Castle.

IN this sensation-mongering age of ours doubtless the oddity of the thing (illustrated on pages 13 and 15) will attract attention, even favourable, among the irresponsible ones of your readers. However it strikes the lover of beauty in Nature, the time and opportunity devoted to such tyranny of subjects is misspent. In Nature we find all the charms of beauty in the endless forms of coniferous life not exceeded by any one class of plants, and without affording the excuse of utility in training and assisting Nature. Hence the principle here applied is a remnant of barbarism, and ranks with the disfigurement of Chinese female toes. The Japan method of dwarfing Conifers is, if well done, on the contrary, admirable in effect in well trained specimens, some of them assuming all the characteristic beauty and picturesqueness of a fine and sturdy British Oak seen through the wrong end of a telescope.

One would fain believe the illustration (page 15), with Araucarias alone left natural, was the recrudescence of some antediluvian epoch of immature creation in its early evolution, if it did not resemble rather the corpse of something or other. Some things need only being mentioned to find all agreed upon whose opinion is worth having.—H. H. RASCHEN.

Black Morocco and Other Grapes.

THERE has been much written of late regarding the Diamond Jubilee, a subject which I have no wish to enter into, but in passing I may note that I believe this handsome new variety is quite distinct from the grand old Black Morocco Grape, which I used to think was unequalled as a late sort till Lady Downe's Seedling took a leading position. The first I heard of the latter was from the late Mr. Thomson, of Clovenfords, then head gardener at Dalkeith, who had discovered its value as a "keeper" of much excellence, and that great cultivator proved what he said by exhibiting it at the spring shows held in Edinburgh. I was then in East Anglia, and soon learned that it could be kept in excellent condition as late as midsummer.

There was at that time many pages written as to the great advantage of lifting Vine roots, and no doubt there was much good accrued from the operation, and, in some cases, a little mischief might be in evidence; also I was young and impetuous at that time, and took advantage of the good opportunity which then came within my reach. I was located where a goodly number of Vines were in as bad condition as could be, old large trunks, free growth of wood, badly coloured foliage, and fruit in small quantity, but worthless. The largest Vine in the collection was Black Morocco. Old employés on the place could not remember ever seeing any Grapes on this Vine, except a few loose bunches with berries like Currants, for size, and stoneless of course. Lifting was done early in autumn. The roots had grown evidently far beyond the border into an adhesive grey clay. Cutting them off was the best we could do, but the gross roots retained were fibreless. A new border was formed of turf carted fresh from a field. The old roots were laid out evenly and covered with 6 or 8 inches of soil. The following year there was a fair growth of small hard wood which ripened early in the season, but on all the Vines the second season after lifting the crop was excellent, and in every respect the lifting process was most satisfactory, especially that which attended the Black Morocco. The bunches averaged about 3 lbs. in weight. The berries were of immense size, somewhat oblong in form. The flavour brisk (and like Lady Downe's) improved much by keeping.

This success did not cease quickly. I left the locality, and when hundreds of miles from where this lifting operation was performed, my successor (an excellent gardener and keen observer) wrote to me regarding Black Morocco, stating that its quality for bearing, colour, and flavour gave great satisfaction. I grafted it (I think on a Muscat) and the fruit was all I could wish. When setting I drew my hand over the bunches several times, but setting was free and no trouble was given to grow fine crops. The habit of the Vine, foliage and wood, is much like Lady Downe's. The late Mr. Thomas Osborn of Fulham Nurseries, said that he understood Black Morocco was one of the parents of Lady Downe's Seedling. The Black Morocco is much larger in berry than the last named, but the flavour and substance were much the same.

The largest of all black Grapes which I have seen is Black Duke, and the most distinct in flavour from any other black Grape I have tasted. I hope to see that grand Grape holding the position among black Grapes which I expected it would have done long before this.—M. TEMPLE, Carron, N.B.

Decorative Chrysanthemums.

I AM obliged to Mr. Jeffries for his kindly criticism of my note *re* bush-grown *v.* exhibition plants of Chrysanthemums. He is, of course, quite as much entitled to his opinion as I am to mine, so in this case and on this point I suppose we must agree to differ, for I certainly do not find very large Chrysanthemum blooms as useful as medium sized ones for decoration as cut flowers, and only in comparatively few cases on the plants. Dwarf growing sorts that hold the foliage well and have only moderately long flower stalks, such as Chenon de Léché and others of this habit, are excellent for use, as your correspondent suggests; but tall growers and sorts with about a foot of naked stem under the flowers are not. No one having seen the fine exhibits at the Aquarium in the vase and basket classes can deny that, suitably placed, these large blooms are very decorative; but in the great majority of cases gardeners could not afford to cut sufficient for their purpose, for it must not be forgotten that the foliage of such flowers soon withers after being cut, and necessitates their being changed, so that although the large flower is still fresh it is comparatively worthless owing to the want of foliage. This is wasteful. With all deference to your correspondent's opinion I must adhere to my own, that large flowers of exhibition standard are a luxury when used for decoration, and that an improved standard of bush-grown and other decorative plants is much to be desired.—H. R.

Book Gardeners.

As a young gardener I feel greatly interested in the Royal Horticultural Society's examinations, and the comments thereon appearing from time to time in the Journal's columns. I entirely agree with your very able correspondent, "A. Day, Herts," in his article in your issue of October 18th, that a certificate from the Royal Horticultural Society is of no practical value to a gardener who obtains his living as such. In fact, I will go a step further, "even if by so doing I expose my own ignorance," and say, that education as defined by a knowledge of foreign languages and sciences, in fact anything beyond the three R's, is wholly unnecessary for gardeners. That every gardener who has had the benefit of a liberal education profits by it in some way there can be no doubt, but that is not the question. Now, let us take it for granted that the object of the more ambitious of our brethren is to obtain the position of head gardener in any of the good and large gardens throughout the country, and let us also glance at how such places are filled. How many gentlemen in engaging a new gardener would pay the slightest attention as to whether his prospective servant knows anything about botany, chemistry, and geology? Not one in a thousand. It is not always necessary to advertise, but assuming that such has been done the employer would make a selection of a few of the best recommended applicants from gardens of repute, or those known to himself, and finally would select the one most likely to suit his particular requirements, regardless of his scholastic attainments, which would not be called in question.

I take it that the employer, be he wealthy or penurious, pays more regard to the quality of fruit and flowers grown, and the general management of his garden; and times without number quite illiterate men have given great satisfaction. Then, again, a tactful tongue forms good first impressions in employers, and if combined with good recommendations soon puts our scholastic friend, who may be minus tact, at a considerable discount. These facts are, I think, evident to everyone who has had a few years' service; therefore, what encouragement is there for any young man to spend hours of hard study, with no prospect of ultimate benefit? On the contrary, I have frequently heard that in some cases it does harm—in this way, that some young men are apt to get conceited, and inclined to show off to their chief, who may be a first-class gardener, and one who has no small measure of contempt for book gardeners, and consequently our learned friend cannot even get a certificate equal to his ignorant fellow worker, who gets into his chief's graces by servility. This applies to head gardeners and their employers, as well as masters and men. In connection with

this, I will relate an instance that has come to my knowledge of a certain duke, "on having occasion to appoint a new gardener," was reputed to have said that he was determined not to engage one who, by his education, was likely to aspire to offices not appertaining to his garden. I have no doubt many will think my view is pessimistic, if they do not think it entirely wrong. Well, I can only say that I hope I am, for the sake of those that desire to succeed. In conclusion, I trust you will forgive my presumption in intruding here, and overlook all the imperfections of the composition, and give it a corner in your valuable Journal, a diligent perusal of which is equal to half a dozen sciences. Possibly some able reader will be able to give the desired condemnation to this view, which hitherto I have not seen in your pages, and which is the sincere opinion of—A WORKING GARDENER.

Plant Elements.

I WAS much interested in the remarks of your correspondent, Mr. W. Taylor (page 557). The soil at Longleat was undoubtedly greatly deficient in the element lime, and I should imagine that, there, the fruit trees suffered from canker, and that the disease of club-foot infested the Cabbages, Broccoli, and others of the Brassica family; that the foliage of the trees was generally of a dark green hue, and that fruit would hang a long time on the trees before being fully matured. In other words there was a tendency to luxuriance of vegetation rather than to maturation of fruit.

With regard to the soil with which Mr. Taylor has at present to deal, the formation as described would lead one to suppose that there is a sufficiency of phosphate, but that it exists in an insoluble condition, and therefore cannot properly nourish the growing plants. I would advise that from 3 to 4 cwt. of superphosphate per acre be applied, of the grade containing from 30 to 35 per cent. of soluble phosphates. I think this would be preferable to basic slag, which is a very slowly acting manure, and is more adapted for fruit trees and permanent pastures than for vegetables. Double the quantity of basic slag is required to produce the same effect as well-made superphosphate. An overdose will not injure plants. Dissolved bones contain, besides the ingredients, phosphates and lime, from 12 to 17 per cent. of moisture, from 12 to 18 per cent. of organic matter, which will contain from 1 to 2½ per cent. of ammonia, and from 2 to 6 per cent. of insoluble silicious matter. There is no iron in bones available as plant food.—J. J. WILLIS, *Harpenden*.

Luculia gratissima.

THIS beautiful plant is worthily esteemed for the globular cymes of pink fragrant flowers that are produced so freely under suitable culture. The time of year at which the *Luculia* flowers—viz., autumn and winter—is also a recommendation of considerable importance, for not only is the plant highly decorative, either grown in pots or planted out in prepared borders in a greenhouse, but its value is inestimable for cutting purposes, as the flowers are so continuously and abundantly produced. Such qualities as those mentioned justly entitle the *Luculia* to more general notice and cultivation; and as its requirements are few, any person who possesses a greenhouse or conservatory may safely venture to obtain a specimen. When planted out it rapidly acquires the proportions of a shrub or small tree, and requires to be well pruned after flowering is over; but perhaps it is of more general value when grown in pots of medium size, say 6-inch, and plants in that size pots or a trifle larger may by good treatment be had bearing large clusters of flowers.

With regard to cultivation, it is especially averse to a superabundance of water or the least approach to stagnation at the roots or in the atmosphere. Therefore a porous soil must be provided, composed of loam, peat, leaf soil, sand, and a few pieces of charcoal, thoroughly incorporated; and whether the plant be in a pot or a border, the drainage must be well attended to. When growing freely, or about to flower, weak liquid manure may be occasionally supplied with advantage. Propagation is easily effected by taking cuttings of the young firm wood, with a heel of the old wood attached, and inserting them in similar soil to that already described, employing rather more sand. They should be placed near the sides of the pots, the latter being plunged in good bottom heat and covered with a bell-glass. When the cuttings are rooted shake them out carefully, and pot them singly in thumb or 3-inch pots, afterwards increasing the root room as the plants advance in growth.

When thoroughly established they may be grown in any cool or intermediate house where the temperature is not allowed to fall much below 50° at night at any period of the year. If planted out they succeed well under similar treatment to the *Camellia* in respect to temperature and moisture.—GROWER.



Three Good Roses.

THE accompanying illustration represents three Roses that are worthy of being grown in every collection. The engraving has been prepared from blooms grown in the nursery of Messrs. W. Paul and Son, Waltham Cross, and we are indebted to Mr. Arthur Paul for the following description of the varieties depicted.

White Lady—A Hybrid Tea-scented variety, sent out by Messrs. Wm. Paul & Son, of Waltham Cross. Colour creamy white, flowers of largest size, with immense Magnolia-like petals, produced in great profusion. One of the handsomest, most distinct, and most effective Roses in the garden. A fine exhibition flower, for which purpose the blooms should be cut young (left flower).

Grand Duc Adolphe de Luxembourg.—A very distinct and handsome Hybrid Tea Rose, sent out by Messrs. Soupert & Notting, of Luxembourg. The petals are rosy red on the one side and brilliant lake on the reverse, two distinct shades of colour, the contrast between them forming one of the chief beauties of the flower. The plant is of vigorous growth, the flowers are produced in profusion, and the variety is one of the most effective in the garden (upper flower).

Victor Hugo.—A Hybrid Perpetual sent out by Mons. Schwartz, of Lyons. The flowers are remarkable for the brilliancy of their colour, being bright scarlet shaded with black. They are of moderate size and freely produced. The plant is of moderate growth (right flower).

Climbing Tea Roses in Pots.

FOR culture under glass, whether in pots or planted in the side borders, few plants will produce a better or more certain crop of bloom than Tea Roses. With a few of the newer additions we now possess a grand assortment of colour; while those who prefer to adhere to the older varieties will not err in growing *Maréchal Niel*, *Climbing Perle des Jardins*, *Climbing Niphetos*, *W. A. Richardson*, *Reine Marie Henriette*, and *L'Idéal*.

There is a decided advantage in having these climbers in pots when early forced blooms are required. They should be grown similarly to young Vines, one or two good rods being much better than a number of medium growths. December and January are two excellent months to commence operations, as we are in the midst of grafting. Seedling Briers established in small pots are the best stock, being closely followed by Brier cuttings, which may be potted at once, and then worked a few weeks later, or be grafted before potting. I like to have the roots of stocks partly established, and on the point of producing a good flow of sap. It is of greater importance than is generally recognised to have the stocks in the exact stage I will describe. They should not be sufficiently forward to receive a check to root action when cut down for receiving the graft, nor should they be quite dormant. Catch them when new roots are starting freely, and about a quarter of an inch long; no more. Where stocks are not available, portions of healthy Brier roots will do almost as well. There is a great advantage in the latter as regards probable suckers. It is well to secure the roots in suitable pieces, and to lay them in soil under cover for a couple of weeks before grafting, if they are to be worked previous to being potted. They are easier to handle thus, and if the rise of sap be encouraged in this way it is more nearly approaching that of the graft. The latter are much best when procured from plants under glass, and unless the roots and stocks are prepared in the manner indicated we get the sap of grafts a little more forward than that of the stock, whereas the contrary is far preferable.

When grafted they should be placed in a close case, having a gentle bottom heat; 65° is a good temperature. Grafting wax, moss, clay, or any other substance are not used by the majority of trade growers to keep air from the wound while a junction is being made, as healthy scions and stocks unite better without such aids. Some few are certain to grow in advance of the rest, and it is a good plan to remove them from the case when young growth of about 2 inches has formed. On no account must they receive any severe check, or strong rods of growth cannot be produced. Repot them when necessary, using a slightly richer compost each time. I do not care for them in larger than 6 to 7-inch pots during the first summer, as I find the wood matures better, and quite enough length can be obtained if the plants are treated generously. Frequent syringing and full exposure to sun, especially towards the latter part of the summer, are most essential. It is best to remove them to the open by the



ROSES.

WHITE LADY.

GRAND DUC ADOLPHE DE LUXEMBOURG.

VICTOR HUGO.

middle of July. My plan is to stand them on the south side of a hedge and half plunge the pots. The shoots are secured to the hedge by one or two stout pieces of string stretched from end to end. This keeps them from blowing down and being otherwise injured by wind. They also get plenty of air, partial shelter, and full exposure to sun. Here they remain until thoroughly ripened, a process which may be materially assisted by judicious watering.

Many persons object to repotting their Roses previous to forcing, believing that a greater profusion of bloom is secured by keeping the plants root-bound. My own experience is decidedly in favour of an additional shift into good soil after the plants have become matured and rested for a few weeks. Last year I potted all those I intend forcing about the middle of October. By doing this early the roots move steadily and strongly into new soil, being far different from those produced upon root-bound plants. This system also recommends itself to me for the following reasons. The compost in a 6-inch pot is necessarily much exhausted after having produced the strong rods we require, and is therefore incapable of carrying a heavy crop of blooms and foliage under the strain of early forcing. True, they can be aided by liquid stimulants, but even then it is a great tax upon the roots. Nor do the roots commence new growth until introduced to heat, while if freshly potted we get a natural and steady start that is greatly in favour of satisfactory breaks of new wood when taken under cover. It is of considerable importance to get the roots moving in this way, otherwise artificial heat causes the eyes to burst so rapidly that the whole of the sap in the wood is soon exhausted, and a check is experienced through the backwardness of the roots. We can have no better guide than Nature, and the roots of plants invariably start first under these conditions.

A check to young growth, from whatever cause, is often the sole reason of an indifferent crop and much blind growth. Dryness at the root is a fruitful cause of this, and a root-bound plant dries very rapidly. When new growth is active, and the roots have permeated the fresh soil, liquid manures are beneficial and necessary. My plants are brought into heat in batches so as to keep a succession of bloom. On November 15th I cut blooms of climbing *Perle des Jardins* and *L'Idéal* from plants grafted last January and treated as I have described. This was my earliest set, and consisted of a few of the forwardest plants, which were potted early in September, and brought under cover by the end of the month. I trust I have made it sufficiently clear that none of the plants are moved from the 6-inch pots until the wood is thoroughly matured.—ROSARIAN.

Fruit Trees in Pots.

FINISH top-dressing trees in pots in orchard houses, taking off all the mulching and a considerable portion of the surface soil with the fingers and a pointed stick, replacing it with fibrous loam and about a fourth part of sweet, decayed manure, firming it well with a stick and filling to within half an inch of the rim, or rather less, giving a little water only to those pots that are dry. A few of my plants that were in small pots when the top-dressing was being attended to I transferred into others a size larger, using similar soil, but with less manure in it, and ramming it firmly round the ball. All such removals should, however, be done at the end of October or the beginning of November if the plants are to stand in the house after shifting. No plants in pots are to be thoroughly depended on for satisfactory fruiting unless the roots touch the sides of the pots, and this should be thought about in all potting.

If this can be secured, the time of potting is of less consequence; but the plants must be established under ordinary circumstances. For instance, I once had a good crop of Cherries from plants in pots that had been grown in the open ground in a nursery during the summer, but were pinched in. They had been lifted with good roots, but with nothing worthy of the name of a ball, and came in a neat package, the roots done up well in moist litter and fern, as far as I recollect, about the middle of March. I potted them carefully in rather small pots, laying out the roots evenly, and firming the soil as I proceeded. I then made a bed of warm litter and leaves from 18 to 24 inches deep, and plunged the pots into it, covering them over several inches, and putting in trial sticks so that the heat should not exceed at the maximum from 80° to 85°, giving no protection to the top of the plants except a net to keep the birds from the buds. By the time the buds began to swell the heat of the bed was little more than the earth in the open air, and by that time the pots were becoming filled with fine roots. The pots were partially raised from the bed, then entirely, and then removed to and plunged half way down in the soil of the house, and the crop was everything that could be desired.

I may here mention that my pots are thus all partly plunged, chiefly for saving water, that these are allowed to let the roots out a little in the summer at the bottom of the pots, are raised to break these roots in October or November, and that though I would wish to re-shift, that most of my trees have been a number of years in the same pots, and have borne heavy crops by the help of top-dressing and mulching in summer. If pruning and pinching were attended to in the summer, little will now be required, and beginners should wait a month longer that they may see the wood buds better.

The above example will show what may be done, even now; but in the generality of cases, and where no such extra care can be given, I would advise those wishing for fruit in small pots to let the plants remain in these pots for the season; but if very small make the hole large at the bottom, and either set the pot in the border of the house, or into a larger pot or box, so that the roots may pass through, and still those in the pots press against the pot. Much also may be done with repeated mulchings above the level of the pot.—G. F.

Sweet Peas.

I CANNOT remember a year when Sweet Peas flowered more profusely or continued as long as during the one that is now past. With me flowering began in June and continued until the first week in December. August was not a favourable month for their flowering, but during September and October the plants made vigorous growth and an abundant flower crop. When the plants are properly managed, the seed pods regularly removed, and the roots copiously supplied with moisture, especially liquid manure, it is surprising how well and continuously Sweet Peas will flower. Several are the mistakes made even in growing Sweet Peas. The initial one is that of thinking any kind of soil or the preparation of it will suffice. The second mistake is that of sowing the seeds too thickly, and the third is that of allowing the plants during hot dry weather to become infested with mildew before remedial measures are ever thought of.

Sweet Peas are like Chrysanthemums and other popular flowers, they are becoming so numerous that the difficulty of making a suitable selection of varieties increases yearly. With a view to assisting those with limited experience, I append a selection of varieties worthy of culture, and which I believe to be perfectly distinct.

Sowing the seeds in the open ground in November is a practice some persons advocate. For an extra early flower crop, and where the soil is of a sandy nature, this plan may answer very well, but for a full season's display I prefer to sow early in February five seeds in a 3½-inch pot in sandy soil and place them in a cold frame until the plants are 3 inches high, when the lights are daily drawn off to induce a stocky growth. When the pots are full of roots transfer the plants to 5½-inch pots, using a tolerably rich compost. Directly the first tendrils are to be seen upon the plants place some twiggy sticks to each to keep the growths in an upright position, which favours freedom of growth from the base. Early in the month of April strong plants 1 foot high will be available, which when set out in the open ground will start into growth forthwith.

The arrangement of the varieties is really a matter of personal taste, but clumps are most satisfactory. The preparation of the site, or stations in which the plants are to grow, should be thorough. When grown in clumps, not less space than 4 feet should be allowed between each. Remove the soil 18 inches deep and 15 inches in width, thoroughly break up the subsoil to admit of a quick percolation of water from heavy rains. A couple of shovelfuls of partly decayed manure should be added to the soil, filling in the hole so as to leave a slight hollow when planting, as this is useful afterwards to hold water if the weather be dry. A few twiggy stakes are placed round each clump as a protection from cold wind and a support for the tendrils directly new growth is made. The permanent supports should be placed early to the plants; they should be 7 feet high and as twiggy as possible. If the stakes are set in the ground in a perpendicular manner instead of with the usual inward slant so common in ordinary culinary Pea staking, the haulm will obtain more light and space at the top. The haulm is thus encouraged to spread itself out, covering a greater space, and becoming stronger with more light, air, and sun. Slugs will quickly taste the tender succulent shoots if means are not taken of prevention by scatterings of lime about them frequently. At no time should the plants suffer from drought, and occasional doses of liquid manure will be very beneficial. A mulching of half-decomposed stable manure early in June will prove valuable in conserving the moisture in the soil and keeping the roots cool.—E. MOLYNEUX.

(To be continued.)



The Seed Supply.—The time will soon arrive when growers will be making out their seed list for the kitchen and flower garden and greenhouse. In this, like many other gardening operations, nothing is gained by delay, and many make it a rule to order their seeds during the present month even if the order, through pressure of work, cannot be fulfilled for several weeks. By obtaining the supply early perhaps the cost may be slightly heavier, but there is a greater certainty of obtaining the highest quality.—S.

Outdoor Camellias at the New Year.—I am sending you a Camellia bloom, cut to-day (January 4th), from a plant standing out in the open—not a shrub as high as itself within 20 yards. It is a seedling, about fifteen years old, and is 4 feet 6 inches high, and about 6 feet through. Sir Francis Barry cut a much finer bloom on Wednesday the 2nd. It shows the mildness of the season, also that both wood and buds were well ripened last summer.—ROBERT BROWN, *The Gardens, St. Leonard's Hill, Windsor*. [The flower was perfectly developed, and the leaves of remarkable substance. In addition to the mildness of the season it demonstrates the suitability of the soil in Sir Francis Barry's beautiful garden near Windsor for Camellia culture.]

House Culture of the Foreign Grape.—The time will probably come in America when the European Grape will again be a valuable commercial fruit. It was at one time, the fruit selling readily at 1 dollar 50 cents a pound. The cultivation went down for several reasons, among them the fear of competition with the outdoor-grown European Grapes from California, the injury to the roots by the phylloxera, and the difficulty of getting the intelligent labour to manage the Vines properly. It is clear, however, that no more fear of competition with the Californian product need be feared than with the Spanish Grapes that come in barrels of cork dust from the Old World. These are very good in their way, and will usually bring remunerative returns, though the figures be small. There is no comparison between these in quality as compared with those grown under glass by one who knows his business. This has been abundantly proved in England. The Spanish Grapes in England bring no more than 6d. or 9d. a pound; while the Muscats and Black Hamburgs bring comparatively enormous prices.—("Meehan's Monthly.")

Germination.—Apart from the primitive germination which takes place when seeds are committed to the soil, there is the annual germination which, under certain conditions, exists in vegetation of all descriptions, when, having passed through a dormant or restful period, either terrestrial or atmospheric warmth causes activity, and germination in bud of flower and leaf rapidly ensues. It would be interesting to learn which force exercises the more potent influence in promoting this germination, whether it be earth or air warmth. There is, consequent upon the continued mildness of the winter, a good deal of alarm existing lest this comparative warmth should generate bud activity in all things that properly should be resting. The assumption in all such cases, therefore, naturally is that the atmospheric warmth is the greatest factor in thus promoting premature growth. But then this comparative mildness has not been without its influence on the soil, for that is relatively of a much higher temperature than is the case where frosts prevail, hence it would seem as if both earth and air furnished undue warmth in unison. But what must be the condition of things existing when, as in northern regions, the dense body of snow covering the earth, whilst showing how very cold is the air, yet serves to keep the earth on which it rests so warm that growth proceeds rapidly beneath, and as the snow disappears the soil is found to be carpeted with flowers? It would in such case seem as if the one factor in promoting growth was the warmth in the protected soil. When we proceed to force in the winter Vines and Peaches, planted in outside borders, it is the atmospheric warmth which becomes the germinative force. Probably it will be found that it is air warmth which is the greater force of the two elements. With a due proportion of air, warmth, moisture and soil all growth seems easily possible, but in premature growth all these requirements are not equally present.—A. D.

Felixstowe Flowers.—A correspondent enumerates the following plants as flowering at Felixstowe on New Year's day:—"Geraniums, Snapdragons, Mignonette, Alyssum maritimum, white Periwinkle, blue, red, and common Primroses, Polyanthus, Wallflower, yellow, crimson, and purple Mesembryanthemum, single Hollyhock, Veronicas, Snowdrops, Iris stylosa, Tritoma, Japanese Anemone, Escallonia, Nasturtium, Potentilla, H.P. Roses, Tea and Polyantha Roses, Carnations, Aubrietias, Morina longifolia, Chrysanthemums, Christmas Roses, Armeria, Gentian, Cineraria maritima, Omphalodes verna, Campanula garganica, Hydrangea, Ceanothus, Lithospermum prostratum, and Brompton Stocks."

Watsonia lridifolia Ardeni.—It is surprising that this grand new Cape bulbous plant is not oftener met with. Introduced in 1896, it has not received the attention which its merits deserve. In habit of growth it resembles the Gladiolus, and its strong branching stems, carrying from fifty to eighty flowers of the purest white, and from 1½ to 2 inches across, make it a welcome addition to the conservatory, and one which, if seen, is sure to be admired. Although treated like a Gladiolus, it succeeds moderately well outside; it is, however, as a greenhouse plant that the grower will have the best results. If started into growth in April it will be in flower in August, but instead of drying off in the autumn I find it succeeds better if it be kept growing slowly in a frost-proof house through the winter; it should be placed in a temperature of about 55° in March, when it will be in full flower in May. It likes a light turfy loam, with a good sprinkling of sand and leaf mould, and a little refuse from an old Mushroom bed. The plant must be thoroughly ripened in the sun after flowering to insure future success.—T. H. W., *Staunton Park*.

Jacobinia chrysostephana.—About thirty years ago Mr. Bull of Chelsea introduced this plant to our gardens from Mexico, and in 1871 it was figured in the "Botanical Magazine," t. 5887, under the name of *Cyrtanthera chrysostephana*. It differs somewhat from the majority of species of *Jacobinia* in the way in which its flowers are borne. As a rule they are borne in large loose terminal panicles, as in *J. Ghiesbreghtiana*, or in long dense terminal heads, as in *J. magnifica*. In the case under notice, however, they are crowded together into dense flattened corymbs, which crown each branch. Like the majority of winter flowering Acanthads it should be treated as an annual, cuttings being rooted in February or March and grown all the summer, pinching out the points several times to induce a bushy habit. Throughout summer little or no fire heat should be given, and a free circulation of air ought to be allowed. When the flower heads begin to appear a little extra warmth is beneficial to assist in the development; at other times an intermediate temperature will be found suitable. In general appearance this species makes a sturdy bush with large ovate acuminate leaves, and bears dense flattened heads of bright golden yellow blossoms. As the flowers are produced in November and December, and in places not troubled with fog last several weeks in good condition, it is a subject worth remembering when making a selection of winter flowering plants.—W. D.

Violets and Anemones.—"A. F.," writing to the "Morning Post" from Pembroke, says: "The Post Office declines to forward decayed vegetable matter from Cannes and the Riviera at a loss, and we are all the time perfectly able to supply ourselves with most of the flowers usually sent from that quarter—viz., Violets and Anemones. With regard to Violets, a new bed made up in May will supply us with that flower all the winter according to the season, changing the ground year by year. Anemones in well-prepared ground, seed (not bulbs) sown in March and April, flower from October till they are cut down by frost, and make fresh growth again in May and June, when the seed can be collected. On Christmas Day we had in the drawing-room three dozen Anemones of all the most beautiful colours, fully opened, and just as good as any grown abroad, *A. fulgens* being especially beautiful. The picking began early in the autumn, and will go on till checked by frost. I have two beds about 16 feet square, seed put in lines 18 inches apart, as thin as possible, well weeded during the summer, and occasionally watered if the ground is very dry, and I should recommend light branches or paper loosely scattered over the beds during the summer till the lines are very clearly seen, and showing strong growth. One word more, which is half the battle, when you receive the flowers cut their stalks, and put them in warm water, and expose them to the sun, if any; if not, place the glasses under the warmth of your reading lamp."

Melons.

THE Melon (*Cucumis Melo*), Loudon tells us, "has been cultivated in England since 1570; but the precise time of its introduction and the native country of the plant are both unknown.

The Melon is highly appreciated as a dessert fruit by those who can afford it during the summer and autumn months. But owing to the expense incurred in its cultivation it is seldom seen on the tables of any but the rich and well-to-do people in this country.

Some fifty or sixty years ago Melons were grown entirely in pits heated by decomposing stable litter, leaves of trees, and spent bark from the tanyard, and in frames placed on hotbeds of these materials. This entailed a great amount of labour in making and in keeping the heat up to the proper temperature by adding linings of hot litter to the sides of the beds when the heat declined. But since the advent of cheap glass, and the introduction of the system of heating houses by means of hot-water pipes, and a better style of gardening architecture, the hotbed system of growing Melons has almost disappeared from our gardens.

My first experience in making a hotbed for Melons takes me back more than fifty years. It was then considered an important matter to be able to make a good hotbed which would maintain the heat till the crop of fruit was ripened. In making the bed the litter, leaves, and bark (as the case may be) were collected in large heaps close to where the bed was to be made. After they had begun to heat they were turned over several times at intervals of a few days to allow the rank steam to escape, and the heat to mellow down to the desired temperature before making the bed. The heat was ascertained by means of trial stakes thrust into the heaps, where they remained until the materials were in proper condition to put together. The stakes were pulled out daily, and the heat gauged by the feel of the hand. I do not remember ever seeing a thermometer used for that purpose. The bed, which had generally a southern exposure, was made from 2 to 3 feet wider than the frame on all sides, and was raised to the height of 4 feet at the back and 3 feet at the front, so that when the frame was placed on it it would slope gently to the front. Stable litter was used to form the sides to make them firm and strong, and the leaves, litter, and bark were put in the interior of the bed. Sometimes these were kept separate and put on in layers, and sometimes they were mixed all together.

As the building of the bed proceeded the materials were shaken out, and spread evenly over the surface, and trodden at short intervals to guard against the bed settling down more in one place than in another when it was finished and the frame placed on it. To prevent the heat from rising too rapidly at first and injuring the roots of the young plants, a few turves with the grass side down were placed in the centre of each light, and small mounds of earth—loam and leaf mould—were placed on the turves, and when these were warmed to the proper temperature the plants were set out—sometimes one plant and sometimes two in a light. The bed was not earthed all over at once, but by degrees as the plants grew, to the depth of a foot or more. As soon as the plants had made four leaves beyond the cotyledons the tops were pinched out to make them branch out and cover the bed. The leading shoots were allowed to grow to near the top and bottom of the frame before being stopped, and the lateral shoots from them were stopped a few leaves beyond the fruit, trained, and thinned out as occasion required. Care was taken that the female flowers were fertilised when perfectly dry, and as early in the season as possible, when a sufficient number were open at the same time to secure a crop.

Soon after the fruit began to swell they were placed on pieces of slate, or inverted flower pots, to keep them off the damp earth, and to expose them to as much light and air as possible. The cultivation after this consisted chiefly in watering the beds, giving air to the pits or frames, and keeping the temperature as near 70° as possible at all times, allowing a rise of 10° or 15° with sun heat during bright weather, syringing the plants with tepid water early in the afternoon, and closing the lights immediately after to secure as much sun heat as possible. As the fruits advanced towards maturity less water was given to the plants, and in some cases it was withheld altogether. This was done with the idea that drying-off the plants would impart flavour to the fruits. One can scarcely credit intelligent men practising a system so repugnant to nature. I think no one ever dries off the plants now to impart flavour to the fruits. On the contrary, they try if possible to keep the foliage good, and the plants clean and healthy to the last.—(*Paper read by MR. A. PETTIGREW before the Royal Horticultural Society.*)

(To be continued.)

Oxera pulchella.

ONE of the handsomest warm greenhouse or cool stove climbers with which I am acquainted is *Oxera pulchella*. The leaves are very smooth, bright green, and the flowers white, producing when grown and flowered to perfection a most charming sight. This *Oxera* is an extremely free-growing shrubby climber, producing immense cymes of white flowers during the winter. They are freely produced, both axillary and terminally, on the ripened wood, therefore to secure the proper ripening of the wood the plant must be afforded plenty of light; indeed, it cannot have too much, even full exposure to the sun will not injure it. Train it on the glass end of a house, up a rafter, or along the ridge of a roof, say where there is a lantern top, as these are the positions which would suit it best.

By far the finest plant, and carrying the most flowers I have ever seen, was trained up the glass end of a cool stove, where the temperature during the winter was kept at about 55° to 60°. A moderate degree of temperature, such as that mentioned, is necessary to flower this plant properly, although it will live through the winter in an ordinary greenhouse; but under such treatment I failed to flower it, and it was not until it was moved to its present position two years ago that anything satisfactory was done with it. It flowered the following year and again last year about the same time—Christmas. It is by no means particular as to soil, but a good friable loam seems to suit it best.

It is easily propagated in the usual way, either by cuttings or seeds, which are produced rather freely; but cuttings inserted round the edges of a pot in sandy soil and placed in a propagating frame root in a few weeks, and if potted and liberally treated may be expected to flower in about a year, much depending on the time of year at which the cuttings were rooted.—R. H.

The Gooseberry.

THE Gooseberry is a native of the north of Europe. In a wild state the berries are no larger than a Red Currant, but when the bushes are properly cultivated immense crops of large fruit are produced. The Gooseberry is one of the few fruits which succeed in any soil or situation, consequently it is grown, but not cultivated, in every garden. Owing to the bushes producing fruit without any attention they are frequently never touched, except, perhaps, with the garden shears. Even when thus neglected they produce plenty of fruit, but it is of very inferior description.

The Gooseberry is one of the easiest of all fruits to propagate. When pruning the bushes select all the strongest shoots made during the summer, cut them 1 foot long each. Begin at the bottom, and rub all the buds off except four at the top; leave the spines on, as they assist greatly in keeping the cuttings in their places when they are inserted in the ground. A quantity of leaf soil or well-decayed manure must be spread over the surface. Insert the rows of cuttings as the digging proceeds. A space of 15 inches should be allowed between the rows, and 4 inches between the cuttings. Let the cuttings be 4 inches below the soil, which will leave 5 inches of clear stem between the ground and the first branch. We have raised many Gooseberries in this way without losing a cutting. They must not be disturbed at the root until the following spring.

Throughout the summer hoe between the rows frequently, and never allow them to become choked with weeds. They should make shoots from 4 to 6 inches long the first season. Where the cuttings were all disbudded except 3 inches at the top each plant will produce from four to six shoots. When pruning these, as soon as the leaves have fallen only cut about 1 inch from the point of each shoot. After this, if it is desired to make large bushes quickly, lift every other plant in the row, and plant them in a fresh piece of ground 18 inches between the rows and 10 inches or a foot between the plants. The ground on which these are planted should be well enriched with manure. During the second year's growth hoe between the rows as formerly, and by pruning time the second season you will have good sized bushes. When the shoots are clustered together in the centre they must be thinned out to at least 2 inches from each other; but do not cut off any that are spreading outwards, as this is just what is wanted to form a well-shaped bush. All the shoots left on at this time may be cut back to 6 or 8 inches whence they started.

After their third season's growth they may be pruned as before, and then they will be ready for planting in their permanent fruiting quarters. They may either be planted in a single or double row along the sides

of walks, or in one of the garden quarters. In either case the ground should be trenched 2 feet deep, incorporating with it plenty of manure. Supposing the ground to have been prepared in November or December, the bushes may be planted in January, February, or

but hoeing is required to be done to the soil for twelve or eighteen months after the bushes have been planted, but never let a winter pass without pruning them carefully. Always keep the bush in good shape. Never leave the wood crowded. When the bushes have



OXERA PULCHELLA.

March, when the ground is free from frost. At this time the bushes should be planted at the least 4 feet apart each way. Make the holes large enough to let the roots in easily, press the soil firmly about them, and place a strong stake to each if the situation is exposed. Nothing

attained their full size cut the young wood close in to the old stems annually. When they have grown in the same soil for four or five years, after pruning spread some good manure all round the stem and over the roots, and fork it lightly in. Do this annually. When the

bushes became old and the branches begin to moss-up and die, root them out and plant young bushes.

Where many are wanted for preserving grow the red sorts for this purpose. Where dessert is the object grow white, yellow, and green varieties. Apart from the uses to which they may be put when gathered off the bushes, they may be bottled in a green state and preserved for this season of the year. We are using some now which were bottled in June, and very acceptable they are for tarts. Various kinds of caterpillars are most destructive to the Gooseberry. Nothing proves such an effectual cure for them as gathering them with the hand. We always keep our bushes perfectly clean by looking over them frequently from the time the leaves are formed until the fruit is ripe. Birds are troublesome when the fruit is ripe, but old nets are cheap, and prove an effectual safeguard.—M. J.

National Dahlia Society.

Annual General Meeting.

MR. EDWARD MAWLEY presided over the annual general meeting of this society, which took place at the Hotel Windsor on Tuesday afternoon. There was, owing probably to the unfavourable weather, a comparatively small attendance. Punctually at two o'clock business commenced by the reading of the notice convening the meeting, immediately after which the report of the committee and the treasurer's financial statement, both of which are given hereunder, were read.

The committee in presenting their report are able to congratulate the members of the society upon having held during the past year the largest show in the history of the society.

The annual exhibition was held on September 7th and 8th at the Crystal Palace. The number of entries in the competitive classes, excluding seedlings, was about 360, an increase of about 20 per cent. over the average of the three preceding years, in each of which there were 300 entries more or less. Omitting the blooms submitted for certificates and those staged "not for competition," the number of Shows and Fancies taken together was 1302, the same number as in the previous year; of Pompons 1908, an increase, as compared with the previous exhibition, of 108; of Cactus 2625, an increase of 816; of singles 1212, an increase of 396, making a total of 7047 blooms, an increase of 1320.

For the fourth consecutive year exceptional drought has been experienced, especially in the earlier part of the season. The effect of this was noticeable in the quality of the blooms, the Show and Fancy varieties being the chief sufferers. During the week preceding the exhibition there were some very cold nights, frost and its ill effects being the hard fate of some growers. After this the weather continued to be so mild in the south that the plants were covered with bloom even in the second week of November.

Several changes were made in the schedule for the past year—the most important being the addition of several classes for Cactus Dahlias in the nurserymen's section. A class for sixty blooms, on boards, was introduced and proved very interesting, but the most successful introduction was the class for twelve vases, each containing six blooms, with any suitable foliage. This produced keen competition, and was one of the most interesting classes in the show; it formed a welcome relief from the more usual methods of staging, and if the method can be extended, it will add further to the charm and variety of the exhibition. In the amateur section, classes for Cactus Dahlias on boards were introduced for the first time, and proved to be very popular. The experiment of a class for Cactus Dahlias in pots was tried, a cup being generously offered for this purpose. The results as seen at the exhibition were not encouraging, but it was found that several intending exhibitors had mis-timed their plants, and subsequent experience tends to show that such a class would be more successful another year. The plants were not ready for the show, but made a good display a week or two later.

The display of seedlings was more numerous than ever, and the Cactus section increases with great rapidity. The committee welcomes the different forms amongst the new varieties, and would be unwilling to set up any particular type as being the ideal one.

On September 25th, a meeting was held at the Drill Hall in conjunction with the fortnightly meeting of the Royal Horticultural Society, when a large number of seedlings came before the committee, and fourteen new varieties of various classes obtained certificates, thus fully demonstrating the value of a late meeting.

During the year a Girdlestone Memorial fund has been raised in order to perpetuate the memory of the society's late president and to commemorate the valuable services which he rendered to the society, and his achievements as a grower and raiser of single Dahlias. A medal has been established, to be called the Girdlestone Memorial Medal, and to be awarded at the society's exhibitions and those of affiliated societies.

The past year has witnessed the adoption of a scheme by which local Dahlia and other horticultural societies can become affiliated to the National Dahlia Society. The first society to avail itself of this privilege was the Boston Dahlia Society.

The scheme referred to is a portion of the new constitution decided upon at the annual meeting on January 16th, 1900, and printed in the report for the year (By-laws 1 to 13).

In the early months of the year a sub-committee undertook the revision of the official catalogue, a task rendered necessary by the rapid evolution of the Cactus section. The select lists were revised, and descriptions added in the case of new varieties that have received recognition from the society. It will be a matter for consideration whether some revision and addition to the catalogue must not be made annually.

The committee deeply regret to have to record the loss by death of one of the patrons of the society—the Right Hon. Lady Penzance.

The committee, in reporting an increase of membership, would tender their thanks to those members who have endeavoured during the past year to increase the influence of the society, and, in conclusion, express the sincere hope that each member of the National Dahlia Society will make every effort to obtain the support of new members, in order that the work of the society may be extended and carried on to the best advantage.

Paragraphs were also included conveying the best thanks of the committee to the donors of special prizes, and giving a list of the several varieties to which first-class certificates have been awarded during the past year.

Financial Statement.

RECEIPTS.		EXPENDITURE.	
Balance in hand	£7 10 2	Prizes	£86 4 6
Subscriptions	73 10 0	Printing and stationery	23 4 9
Special prizes and donations	30 13 0	Postage, &c.	7 0 3
Affiliation fee	0 10 6	Medals	5 3 3
Advertisements in schedule	14 19 6	Balance in hand	6 10 5
Medals	0 15 0		
Catalogues	0 5 0		
	£128 3 2		£128 3 2
ASSETS.		LIABILITIES.	
Balance in hand	6 10 5	Prizes	56 15 0
Advertisements	1 0 0	Special prize, 1901	3 3 0
Medals	1 13 0	Subscriptions, 1901	0 5 0
Crystal Palace	50 0 0		
Balance	0 19 7		
	£60 3 0		£60 3 0
(Signed)	C. E. WILKINS, Hon. Treas.	Audited and found correct, Jan. 8th, 1901. (Signed) HARRY TURNER.	

In moving the adoption of the report the chairman considered that it was very satisfactory, and thought that the society should be congratulated upon its position. He adverted to the fact that last year's show was a record one, and that the number of members also constituted a record. These facts showed that the society was healthy and possessed life and go. He also referred to the system of awarding medals. Regarding the financial statement he thought the position was somewhat undignified, but this was largely due to the fact that the Crystal Palace Company had not yet forwarded the £50 due to the society. Mr. H. J. Jones seconded, and the report and the financial statement were carried.

To prevent a recurrence of such a position as the present, and with a view to starting a reserve fund, the committee recommended that the prize list be somewhat curtailed, and this was done to the extent of about £20. Mr. H. Burrell proposed, and Mr. J. T. West seconded, that the select list of Cactus Dahlias be removed from the report, as its educational value was now practically nil. Mr. Wilkins proposed, and Mr. Jones seconded, that the qualifications for societies desiring affiliation be reduced from the necessity of offering £10 in prizes to £5, and this was carried. One or two minor alterations in the rules were made, and the proposed schedule having been accepted, the meeting closed with a vote of thanks to the chairman.

Office of Plant Industry.—An important step has been taken by the United States Department of Agriculture in placing several associated divisions under one head. The preliminary move of putting Dr. B. T. Galloway in charge of gardens and grounds had for its object the ultimate bringing together the several groups in the department doing plant industrial work. It has been recognised, says an American paper, for a long time that much benefit would result by closer co-operation in the department, and to this end four divisions—namely, vegetable physiology and pathology, agrostology, pomology, and gardens and grounds have now become affiliated. The group collectively is to be known as the Office of Plant Industry, with Dr. Galloway as director and Mr. Woods, who has been assistant chief of the division of vegetable physiology and pathology, now becomes chief of the division. The other chiefs remain the same—namely, Prof. F. Lamson-Scribner, chief, division of agrostology; and Mr. G. B. Brackett, chief, division of pomology. The plan will make possible broader lines of work.

Young Gardeners' Domain.

Christmas Decorations.

ALTHOUGH the Christmas of 1900 is now numbered with the past, a few words on the above subject may not be out of place. I think that for anyone having the opportunity to do so, a peep at the displays made by our leading London florists is most interesting and instructive. Certainly, to judge by the windows this season, there has been no lack of variety and colour, and in the majority of cases the pictures were most attractive.

Chrysanthemums were well represented by L. Canning, Princess Victoria, and Golden Gem. Duc Van Thol Tulips in three colours seemed very plentiful, and, mixed with Fern, most useful for making up small vases for the Christmas tables. Poinsettias are indispensable, their scarlet bracts looking very bright and warm at this dull season. Calanthes, Cyclamens, Primulas, Roman Hyacinths, Narcissi, and Violets, all found their way into the shops, in company with the generally despised Camellia; Crotons, too, in numerous varieties, were greatly used to add to the display. By the retarding process, to which the crowns and bulbs are now subjected, Lily of the Valley and Lilium Harrisii can be seen at this time of the year much finer than formerly.

Holly, both green and variegated, was greatly in evidence for wreaths and crosses in preference to those made with flowers. Some of the designs were especially worthy of notice, combining as they did harmony of colour with lightness of arrangement. One large boat-shaped vessel was filled with Narcissus obvallaris, interspersed with pieces of Croton Thompsoni; this, on a foundation of Maidenhair Fern, relieved by a few growths of Dracaena Sanderiana and yellow Jasmine, looked very charming. Begonia corallina made an effective display in one window. By the way, this old climbing Begonia is a grand addition to the shady side of the stove. Always in bloom, its coral coloured flowers are most useful for table decoration.

Callas were greatly used, the variety Little Gem looking very elegant, made up with its own foliage. Some of the designs I thought bore rather too much evidence of the Parisian taste with their lavish display of coloured ribbons and stuffed birds. I think too much artificiality detracts from rather than adds to their elegance and beauty. H. C. D., Stanmore.

Thanks to "An Old Boy."

As I sat reading the excellent advice given us young thinkers by "An Old Boy" my thoughts strayed some few years back, to the time when that good old veteran wrote such admirable articles in our Journal, for the benefit of all young gardeners. I well recollect the rush for the Journal each Friday night, and although the article was read aloud by the foreman, each individual in the bothy was eager to scan for himself the great thoughts written by this excellent scribe. Many were the resolutions that were made to try and follow in the footsteps of our old friend. How fortunate for myself, and many others no doubt, that the writer was not discouraged by the critical remarks made by his friend, who regarded his teachings "as not a ha'porth o' good to the young fellows nowadays," and what a beautiful example "An Old Boy" has shown to other head gardeners by endeavouring to help those who are at present beneath them.

Many young men of to-day, who at present are disgusted with themselves, their profession, and everything about them, would by a little encouragement and homely advice given at the proper time have been lifted up to a higher circle, and living a life that would have benefited their brother gardeners, and be a credit to the profession we are so proud of. But alas! how often is it said that head gardeners take insufficient personal interest in their subordinates. In some cases, indeed, it would not pay us young bothyites to follow in the footsteps of our superiors outside the garden; and yet when each young fellow enters on his gardening career it is his desire to follow in the footsteps of him who is at the head both in matters relating to gardening and otherwise. Therefore it would be well if our "heads" would consider the influence they possess over a young undeveloped mind, as they are very often the making, or destroying, of a very useful subject.

And again, I hope my fellow bothyites will take heed of what our benefactor occasionally greets us with, and think how fortunate we are to have such a noble adviser; and let us resolve to start this new century with higher ideals, nobler thoughts, and eventually, when we are called upon to take a higher responsibility, we shall fulfil those duties to the satisfaction of our employer, and at the same time be an example worthy of being copied by those beneath us. May the "Old Boy" live for many years to help and guide "young bothyites" to overcome their trials and troubles, and may the new century bring peace and happiness to all his kith and kin, is the fervent desire of one who has benefited by his teachings.—J. S., Aigburth.



Hardy Fruit Garden.

Cleansing Fruit Trees.—It is of great importance to cleanse the stems and branches of fruit trees where they may be infested with moss and lichen, American blight, scale insects, or red spider. All these infestations are inimical to the well being of the trees, and they can be better exterminated in winter than in summer, because insecticides may be more effectively applied and used of a stronger character, though in some cases the pests are less conspicuous during the dull season, as, for instance, American blight and red spider. The former, however, is present on the stems and branches, being hidden away in cracks and crannies of the bark, and something of a searching nature is necessary. Red spider congregates in sheltered places under the junctions of stems and branches, and it is in those positions that the application of insecticide should be specially directed.

Moss and Lichen.—Where the stems are thickly encrusted with mossy and lichenous growths the thickest of them should be scraped off without injuring the bark, using a tool made for the purpose, or a piece of hoop iron. The rest can then be readily destroyed by applying a dressing of hot lime, soot, and cow manure. Brine is also effective, applying it with a scrubbing brush over the stems and larger branches. Both lime and brine destroy vegetative growths of a parasitical character, and in due time they will fall off. The well-known potash and soda solution forms a reliable dressing for moss and lichen. It is made by dissolving half a pound of caustic soda and half a pound of crude commercial potash in five gallons of hot water. This solution should be sprayed on the trees at a temperature of 120°. The above is a suitable strength for all the hardier fruits, but for Peaches, Nectarines, and Apricots, also choice Plums on walls, double the quantity of water ought to be used.

Scale.—Apples, Pears, Cherries, Plums, Gooseberries, and Currants are liable to attacks from scale insects, which adhere to the bark and prove unsightly and destructive of the tissues of the wood. A good wash to paint over the trees or distribute by syringing is made of equal parts of lime, sulphur, and soot. These materials may be formed into a paste by mixing with a softsoap solution at the rate of a pound of softsoap to a gallon of hot water. Work this well on the stems and larger branches. To form a solution for syringing and spraying mix a wineglassful of methylated spirits of wine or petroleum into a solution of softsoap consisting of a pound of soap to a gallon of water. This mixture forms an emulsion which, to be thoroughly effective, must be kept well stirred during application to insure the oil being equally distributed.

American Blight.—This is a dreaded pest on Apple trees, and requires careful and systematic attention in applying remedies to reach the insects which hide away in the deepest corners of cracks and openings in the bark frequently caused by canker. Indeed, it is very frequently the case that canker and American blight occur together, the latter living in the punctures and wounds induced by the former. One of the best means of destroying the American blight is to work into the apertures and incisions in the bark methylated spirits of wine or petroleum with a brush. Softsoap and oil formed into an emulsion, using 1 lb. of softsoap to 2 gallons of water, and thoroughly churning in a quart of petroleum, will also prove destructive to the pests, but it must be worked in thoroughly wherever the insects are. Many of the advertised insecticides are useful, and prove efficacious if used in a careful manner.

Red Spider.—Trees that have been attacked with this small but destructive pest in summer should be thoroughly dressed in winter, so as to destroy all the insects and eggs possible. Spraying with soda and potash solution is excellent. Wall trees, including Apricots, Peaches, Nectarines, Plums, and Cherries, may have the stems and larger branches brushed over with a paint-like solution of softsoap, sulphur, soot, and petroleum. The soot is used to darken the mixture, rendering it when applied more easily to be seen, but of itself it is a deterrent to red spider. Clay may be used to thicken and colour the solution if preferred, but soot is better. Much of the young wood may be painted over as well, provided care is taken not to injure the buds. This is best effected by working from the base to the apex of the shoots. This mixture is convenient to dress cordon and restricted branches generally, as these being furnished more or less with knotty and gnarled spurs provide safe hiding places in situations behind the branches which cannot be reached by spraying or syringing.

Preparing for Spring Planting.—Where the planting of fruit trees and bushes has been deferred the ground may be prepared for February or March planting. Should very favourable weather occur, whereby the soil is in good working condition prior to the time mentioned, planting may be done. During the present month, however, if the soil needs preparation this can be proceeded with. Trench it to

the depth of 2 feet, keeping the good soil near the surface and not burying it and bringing the lower and indifferent material to the top. The reversal of the two spits of soil may in some cases be carried out, as, for instance, where it is of uniform quality to the depth named. Early preparation permits of the ground becoming consolidated and in workable condition for planting at a suitable period.

Fruit Forcing.

Peaches and Nectarines.—*Earliest Forced Houses.*—Trees that have been forced regularly so as to start at the "dead" of winter do so with great promptitude, and go on splendidly with very little excitement. But to keep them in good progress the night temperature must be 50°, or even 55° during mild weather, after the petals are fully expanded, the latter heat being sufficient by day in severe weather by artificial means when the sky is overcast, 65° by day from sun heat, and if the air be mild a few degrees more may be allowed. Syringing must cease directly the anthers show clear of the petals, but damping the floor and border on bright days does good by maintaining a genial atmosphere, practising it in the morning and early afternoon. Lose no opportunity of ventilating freely when external conditions are favourable, leaving a little on constantly at the top of the house, increasing it early in the day, and having it free from 55° and full at 65°. When the pollen is dry choose the warmest and driest part of the day for aiding its distribution by shaking the trees or trellis, or taking a camel-hair brush and applying it to the stigmas. If there be any deficiency of pollen of any variety some should be taken from those that afford it plentifully. Inside horders must not be neglected for water, and those outside should be protected with litter or similar material against frost, avoiding fermenting substances.

Disbudding must not be done hurriedly, but any strong shoots of the previous year having a tendency to push growth in advance of the others may be commenced with, first removing the growths on the under side of the shoots, and then the side growths to the number required—namely, one growth from as near the base as possible to supplant that now fruiting, and another, or more, above or on a level with fruit, and which should be pinched to a few inches of growth. Or if the shoot be an extension leave growths at about every 15 or 18 inches to form the bearing shoots of next season, continuing those with the leader intact. Disbudding, however, should be commenced before the shoots are an inch long, and be continued at short intervals until no more shoots are left than will be necessary for furnishing the trees with the essential wood for the ensuing season's bearing. After the fruits are set an occasional syringing will assist the trees to cast off the remains of the blossoms, yet avoid heavy syringings, which have a tendency to weaken the blossoms.

Houses to Afford Ripe Fruit Early in June.—The trees must now be started, the varieties being such as Hale's Early, A. Bec, Stirling Castle, Dymond, Royal George, Noblesse, Grosse Mignonne, Goshawk, and Bellegarde Peaches; Lord Napier, Early Rivers, Stanwick Elruge, Dryden, and Humboldt Nectarines. The house corresponds to the first in many establishments, which with the very early varieties, such as Alexander or Waterloo, and Early Louise Peaches, with Cardinal Nectarine, give ripe fruit about the middle of May, the house being closed early in the new year. Employ fire heat only to maintain a dry temperature of 50°, raising it early to insure the development of the blossom with light and due airing, increasing the ventilation at 55°, avoiding cold currents, and allowing an advance of 5° to 10° from sun heat and corresponding ventilation. A night temperature of 40° to 45° is sufficient until the blossom is well advanced for expansion, when it should be gradually raised to 50°.

Syringe the trees in the morning and early afternoon on fine days until the anthers are exposed, when damping the borders and paths will be sufficient, admitting a little air constantly, with a genial warmth in the hot-water pipes. When the pollen becomes ripe artificial fertilisation may be resorted to. If water is wanted give a thorough supply, affording liquid manure to weakly trees, but warmed to the temperature of the house. Where the blossom buds are superabundant remove those on the under side or at the back of the trellis by drawing the hand the reverse way of the growths.

Succession Houses.—It is not sound and safe practice to defer pruning and dressing the trees until the buds commence swelling. There is then danger of dislocating the blossom buds, and insecticides are more or less harmful. If any trees are swelling the buds more rapidly than is desired, as occurs when the houses have been used for plants, a covering of mats over the roof-lights will prevent the temperature being raised by sun heat to a prejudicial degree, retarding the flowering considerably. Late flowering is mostly a sign of a good set, the sap being less active, and does not evaporate because the wood is riper, thereby not exciting root and top growth unduly. Where the roof-lights are off there will be no occasion for retarding the blossoms, as the weather will do that better than any artificial means. Where the roof-lights are fixed, the house should be kept as cool as possible by free ventilation.

The house to be started early in February, and the trees not previously forced, should now be closed, but if regularly started at that time they will not require any inducement to start at the proper time. The borders must be brought into a properly moist condition, merely excluding frost, and ventilating fully above 50°.

Late Houses.—Let the roof-lights remain off these until the blossom buds swell. Complete, however, the pruning and dressing of the trees and cleansing the house as favourable weather for such work permits. The buds take no harm until they commence swelling, and even then are proof against frost until the flowers show clear of the scales of the buds. Then the lights may be put on, for which there is no necessity until the middle of February or early in March. Where the roof-lights are fixed air must be given to the fullest extent, keeping as cool as possible, and taking care that the trees do not suffer from lack of moisture at the roots.



*. All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Peas for Exhibition (T. O. H.).—The number containing the article on this subject is out of print; we therefore reproduce it on page 30, as it will be of interest to other readers as well as yourself.

Treatment of Camellia (B. A.).—The temperature need not be above 45° for your Camellia. The chief point in managing your plant is the exercise of sound judgment in watering. If the roots once get too dry the buds will fall, while if the soil is made sour by too much water the roots decay. As often as the soil gets dry enough to slightly crumble when rubbed, give water as warm as the house is to pass right through the mass. So long as the soil feels like paste or putty when rubbed more water would do harm. The soil must not shrink from the sides of the pot by getting too dry. Draw a damp sponge over the leaves occasionally on dry days.

Climbers for Stove and Greenhouse (Amateur).—For the stove, Stephanotis floribunda, Allamanda Hendersoni, Clerodendron Balfourianum, and Jasminum Sambac flore-pleno, when well grown, afford acceptable flowers for cutting. For the greenhouse, Lonicera sempervirens, Solanum jasminoides, Hardenbergia monophylla, and Roses Maréchal Niel, Gloire de Dijon, and W. A. Richardson. Lapagerias afford beautiful flowers for cutting; but the plants do not always arrive at a flowering state quickly. For affording elegant leaves for arranging with flowers you should plant Asparagus plumosus. It grows in a stove and warm greenhouse, preferring shade to the full sun. Many persons prefer it to the most graceful of Ferns.

Destroying Mealy Bug (N. N.).—Mealy bug can only be exterminated from plants, greenhouses, and conservatories by careful and persistent efforts. The first matter to attend to is to thoroughly clean each plant. Wherever it is possible lay a plant on its side and give a thorough syringing so as to remove as many of the insects as possible, using either clean water or a solution of softsoap at the rate of 2 ozs. of the soap to the gallon of water. Some of the hardwooded plants might have a wineglassful of petroleum mixed in the soapy solution; but the whole must be constantly stirred during the application of it to the plants to prevent the oil settling on the surface. All worthless plants should be burnt. When the plants have been cleaned every part of the structure must be washed down, and if possible the woodwork painted, the walls limewashed, and the surface of the borders removed. All the advertised insecticides are as good as the soap solution, but anything to be effective must be employed whenever the insects are seen. Especial care is needed in spring and summer, as then the insects are most active and reproductive.

Cotoneaster Simmonsii (W. W. B.).—This berry-bearing shrub is usually trained to walls, but is also suitable for sloping banks, to which the branches can be drawn as may be needed with stout hooked pegs; and if the plants receive sun enough for ripening the wood, flowers and fruits will follow. If your plants had abundance of bushy fibrous roots they will, perhaps, support the long stems; but if the roots were few and much broken in the process of lifting it will be desirable to cut back the stems in the same proportion, or more than half their length, for insuring good growth next year. If you are in doubt whether to prune or not, you had better use the knife, and you will not be likely to err in shortening the stems freely. Spread a layer of manure on the soil over the roots and beyond their extension, leaving it to decay, and if the spring and summer prove dry give water copiously from time to time. Scarcely any pruning will be required when the plants are established, and only a little thinning may be needed if the growths are much crowded. When once fairly growing, however, Cotoneasters usually take care of themselves.

Agricultural Education (Self Help).—The Royal Agricultural Society of England conduct examinations in agriculture and award diplomas. For particulars write to Sir Ernest Clarke, 13, Hanover Square, London, W. Reading alone will hardly be sufficient unless you have already considerable practical knowledge. Agricultural training can be acquired at Wye, Leeds, Nottingham, Aspatria, Newcastle, Holmes Chapel, Dauntry, &c., at reasonable charges for information. Apply to the organising secretary of the various counties.

Pear Tree Scale (P. B. D.).—The growths of the Pear tree are infested with mussel scale, which may be destroyed by painting with petroleum emulsion and other advertised insecticides, or a wash formed of half a pound each of caustic soda and pearlash to six gallons of water, applying with a brush at a temperature of 120° to 130°, wetting every part. This wash must only be used whilst the tree is dormant, and care taken not to dislocate the buds. The whole tree must be treated with the solution, without allowing it to run down the branches.

Vine not Fruiting (J. W. Wood).—Your seedling Vine is not likely to be of any use, and young wood of the Black Hamburgh, the same thickness as the cane, had better be inarched on it in the spring. A graft or scion 18 inches long, sliced nearly half through for a foot in the middle, or a little higher, the seedling cane sliced also, and the two sliced parts made to fit well, bound with tape, then mossed, kept moist, and the lower end of the graft in a bottle of water, will result in a union, and when growth extends from the graft, that on the stock or seedling can be suppressed.

Black Dots on Strawberry Leaves (A. P. J.).—The small shining black dots are the eggs of aphides, which in due course will hatch, and the parthenogenetic insects emerging will infest the buds or expanding young leaves and trusses of bloom. No insecticide will destroy the eggs without also killing the leaves; but when the aphides appear they should be promptly annihilated—under glass by fumigation, repeating at intervals so as to have the plants perfectly clean before they come into flower. Outdoors you may use a decoction of quassia chips, or dust the plants when the young leaves appear with tobacco powder or some advertised insecticide. This is imperative for securing healthy growth and clean fruit.

Chimonanthus fragrans in Pots (S. D.).—Chimonanthus fragrans can be flowered in a pot, but it requires a very large one, good loam, with a little peat, plenty of water in summer, and a warm sunny place in the autumn, and the water to be reduced then to harden the wood. It requires much the same culture as a spurred Currant tree would do, only that the young stubby shoots are what must be looked after and prepared for winter. If a plant has several stems now, and they are bristling with short shoots, these may all be cut in to a bud in the end of March. Ere long they will push. If the shoots come strong pinch them back, so as to obtain two instead of one. If the shoots produced are of the size of from a crowquill to a goosequill they will be quite strong enough, and if these side shoots grow longer than from 8 to 10 inches nip out the points. If the shoots are too thick to obtain light enough thin them out. Give all the heat possible out of doors in autumn, and as much dryness as the plants will stand, to ripen the shoots. If the plants must stand out in winter protect the roots with litter. As the soil becomes damp and the weather is mild the buds will expand. After flowering prune as before.

Uses of Flue Dust (J. F. W.).—This substance is not soot, but that burned, so that nothing remains of a fertilising value except potash, lime, and other mineral matter. If you place a little in the fire you will find that it does not burn; if you do similarly with a little soot it will burn, and the result of the combustion is ash, and corresponds to your sample of flue dust. It has no appreciable fertilising action, but from its mechanical effect may be of slight service on stiff clay or peaty soils, and on garden ground rich in humus. If you have ground of such description you may find it serviceable—indeed, we have used similar on garden ground which had been heavily manured for a number of years, about a barrowload being used per square rod (30½ square yards), spreading evenly on the surface, and pointing-in to a depth of 4 to 6 inches. The lime acts beneficially on the organic matter, making it readily available as food for plants by converting it into ammonia compounds, and these in turn into nitrates and nitrates of lime, in which form the plants take up the chief of their food. The potash of the flue dust is also of service, and there is some phosphoric acid, which we have found to have a good effect on grass land, also in the garden, but the chief factors are the lime and potash.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to

separate them when the paper is damp. (W. N. E.).—1, Cupressus torulosa; 2, Diplopappus chrysophyllus. (T. R. C.).—1, Pteris longifolia; 2, Nephrolepis davallioides furcans; 3, Pteris argyrea; 4, Polystichum aculeatum. (C. G.).—1, Cattleya Walkeriana; 2, Lælia autumnalis; 3, Hedychium Gardnerianum. (E. G. F.).—1, Rivina humilis; 2, Ardisia crenulata; 3, Dieffenbachia picta; 4, Phoenix rupicola; 5, Kentia Canterburyana; 6, Geonoma gracilis.

Covent Garden Market.—January 9th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, table, $\frac{1}{2}$ bush. ...	2	0 to 4	6	Oranges, case	6 0 to 15 0
„ cooking, bush. ...	2	6	7 0	Pears, crate	3 0 7 0
„ Californian, case ...	7	6	9 6	„ stewing, case of	
Chestnuts, bag, from ...	5	0	15 0	„ 72 to 120	4 6 6 6
Cobnuts, doz. lb., best ...	4	0	5 0	„ Californian, case	15 0 18 0
Grapes, black	0	6	2 6	„ $\frac{1}{2}$ case	4 0 9 0
„ white, per lb. ...	1	6	5 0	Pines, St. Michael's, each	3 0 6 0
Lemons, case	9	0	16 0	Walnuts, bag	4 6 6 0
Melons, house, each ...	0	6	2 6		

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 6	to 4 0	Mushrooms, forced, lb. ...	0 8	to 0 9
„ Jerusalem, sieve	1 6	0 0	Mustard and Cress, pmt.	0 2	0 0
Asparagus (Sprue Grass)	0 8	0 0	Onions, Dutch, bag ...	3 6	0 0
„ Paris Green ...	4 6	5 0	„ English, cwt. ...	5 0	0 0
Beans, French, per lb. ...	0 6	0 9	Parsley, doz. bnchs. ...	2 0	0 0
„ Jersey, per lb. ...	1 6	2 0	Potatoes, cwt. ...	3 0	7 0
Beet, red, doz. ...	0 6	0 0	Rhubarb, doz. ...	1 6	1 9
Brussels Sprouts, sieve...	0 9	1 6	Savoy, tally ...	2 0	3 0
Cabbages, tally ...	3 0	5 0	Scotch Kale, per bushel...	0 9	1 0
Carrots, doz. bnch....	2 0	3 0	Seakale, best, doz. ...	10 0	15 0
Cauliflowers, doz. ...	1 6	3 0	„ 2nd, doz. ...	6 0	8 0
Celery, bundle ...	1 0	0 0	Shallots, lb. ...	0 2	0 3
Cucumbers, doz. ...	12 0	18 0	Spinach, bush. ...	1 0	1 6
Endive, score ...	1 6	0 0	Tomatoes, English, lb. ...	0 4	0 7
Herbs, bunch ...	0 2	0 0	Turnips, doz. ...	2 0	3 0
Leeks, bunch ...	0 0	1 ½	Turnip tops ...	0 9	1 0
Lettuce, doz. French ...	0 0	1 6			

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Asparagus, Fern, bunch	1 6	to 2 6	Lilac, white, bunch, ...	4 0	to 6 0
Carnations, 12 blooms ...	1 0	3 0	Lily of the Valley, 12 bun.	12 0	18 0
Cattleyas, doz....	10 0	18 0	Maidenhair Fern, dozen		
Chrysanthemums, dozen			bunches	4 0	8 0
blooms	1 0	3 0	Marguerites, doz. bnchs.	2 0	4 0
Daffodils, doz....	12 0	18 0	„ Yellow, doz. bnchs.	2 0	4 0
Eucharis, doz. ...	4 0	6 0	Mimosas, bnch. ...	1 0	1 6
Gardenias, doz. ...	3 0	5 0	Odontoglossums ...	6 0	8 0
Geranium, scarlet, doz.			Poinsettias, doz. blooms.	8 0	12 0
bunches	12 0	18 0	Roses (indoor), doz. ...	2 0	4 0
Hyacinths, doz. ...	4 0	8 0	„ Safrano, doz. ...	1 6	2 0
Lilium lancifolium album	3 0	5 0	„ Tea, white, doz. ...	1 0	3 0
„ „ rubrum	3 0	5 0	„ Yellow, doz. (Perles)	2 0	4 0
„ various	4 0	8 0	Smilax, bunch	3 0	5 0

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acers, doz.	12	0 to 24	0	Foliage plants, var., each	1 0 to 5 0
Arbor Vitæ, var., doz. ...	6	0	36 0	Geraniums, scarlet, doz.	6 0 10 0
Aspidistra, doz.	18	0	36 0	„ pink, doz.	8 0 10 0
Aspidistra, specimen ...	15	0	20 0	Hydrangeas, white, each	2 6 5 0
Azaleas, various, each ...	2	6	5 0	„ pink, doz.	12 0 15 6
Boronias, doz.	20	0	24 0	„ paniculata, each	1 0 3 0
Cannas, doz.	18	0	0 0	Lilium Harrisii, doz. ...	8 0 18 0
Crotons, doz.	18	0	30 0	Lycopodiums, doz. ...	3 0 6 0
Dracæna, var., doz. ...	12	0	30 0	Marguerite Daisy, doz. ...	8 0 10 0
Dracæna, viridis, doz. ...	9	0	18 0	Mignonette, doz.	8 0 12 0
Erica, various, doz. ...	8	0	18 0	Myrtles, doz.	6 0 9 0
Euonymus, var., doz. ...	6	0	18 0	Palms, in var., each ...	1 0 15 0
Evergreens, var., doz. ...	4	0	18 0	„ specimens	21 0 63 0
Ferns, var., doz.	4	0	18 0	Roses, doz.	6 0 18 0
„ small, 100	4	0	8 0	Stocks, doz.	8 0 12 0
Ficus elastica, each ...	1	6	7 6		

Trade Catalogues Received.

W. Cutbush & Son, Highgate.—*Seeds, Chrysanthemums.*
 E. P. Dixon & Sons, Hull.—*Seeds.*
 Fisher, Son & Sibray, Ltd., Handsworth, Sheffield.—*Seeds.*
 J. Forbes, Hawick.—*Seeds.*
 Kent & Brydon, Darlington.—*Seeds.*
 Little & Ballantyne, Carlisle.—*Seeds.*
 Peed & Son, West Norwood.—*Seeds.*
 Toogood & Sons, Southampton.—*Seeds.*
 A. F. Upstone, Rotherham.—*Seeds.*
 R. Veitch & Son, Exeter.—*Seeds.*
 J. Wood, Penrith.—*Seeds.*



Fatal Supineness.

THE goose of the golden egg is an old fable, but fables were not written without a strong moral purpose underlying their pretty conceit. They teach so much in so little a space, and they teach it, too, in a way that even a dullard cannot fail to grasp the meaning. The haste to be rich is a fatal state. You cannot have your cake and eat it, and yet there are folks all the world over who are every day trying to do the impossible. The worst of it is that the active agents are not the only or by any means the chief sufferers. If people's folly only rebounded on their own heads we should not have much to say; they would be punished, and there would be an end of the matter. But, oh, dear! it is the third and fourth generations that have to bear the brunt of the suffering—the innocent victims for whom we feel the pity.

It is a curious thing how much latent barbarity there is in most of us. Education may and does do much to civilise and tame, but there seems to be a spirit of destruction in the best of us, from the pure child of Nature to the Hooligan of the slum. It is fearful to contemplate the havoc such ruffians may work; not altogether perhaps out of sheer badness, but from a curious mental attitude, compounded of ignorance and the spirit of waste and destruction. How is it that a rare plant or bird is so seldom found? There are hands (and we grieve to say it), hands that should know better, who cannot leave a rare plant alone, but must "collect," or see a strange bird without the itching of the trigger finger.

Apropos of strange birds, we have just been reading a fantastic story of a good parson who "winged" an angel, and the difficulties he experienced to explain away this rather lightly clad unconventional guest in his quiet parsonage. We only wish some of these rabid collectors might be haunted by the spirits of their poor unwilling victims. We all know the fate of the American buffalo, an animal yielding meat and warm clothing, and an animal rendered practically extinct through the sporting (?) instinct of man. Never more will the wild plains be tenanted by that splendid beast whose bones lie bleaching in the wilderness, and the coming generation will only know of him through the pages of the old-fashioned novelist—the Mayne Reid and Fennimore Cooper of our pleasant and early days. Game laws for South Africa are essential, or the more favoured quarry will be extinct as the dodo. Sanctuary they need, and that they must have immediately or perish.

We might multiply instance upon instance of man's folly and cruelty—present gain, without thought of future need. Parched lands, where fertile plains once existed; treeless wastes, arid and unprofitable, and which have to be brought back into cultivation at infinite expense and labour. Pestiferous watercourses carrying death, laden with matter most valuable for the land, but absolutely deadly when held in solution. Think of the work involved in purifying the sewage-laden stream; the stinking river, where no fish can live and no herbage clothes the banks.

But we must go further afield if we wish to see another exemplification of goose killing. We have been accustomed to look to the States of North America as being almost boundless in extent, and providing food not only for their own population, but having enough and to spare for distant people; and so they might have, but for reckless prodigality—we might say wicked prodigality, for wasted food is a terrible sight. It is a curious thing that so little is done in the way of prevention. Why people wait till the evil is extreme before applying the remedy is a question that is beyond us.

Those who have an atlas handy should turn to a map of the States, and, tracing the Missouri river, notice those States which lie west of it. Perhaps few know that these States are the grazing grounds of vast herds of cattle, which have hitherto supplied the States with beef, and had a surplus to spare. "These lands belong to Government, and graziers are allowed free use of them, thus reducing the cost at which they can deliver beef in the markets of the thickly populated States." But land that is being constantly and heavily grazed becomes exhausted as much as unmanured arable land, and nothing has been done, either to give the lands a rest or a little additional help. "Many of the Western States that at one time were famous for their stock-raising industries do not have 50 per cent of meat-bearing animals that they had ten years ago. These districts

belong to the public domains, but on account of the hostility of the men who now have free use of them, it is impossible to get authority to control them as we think best. They are located in areas where there is little or no rain, and which are too high for irrigation. They grow native Grasses, which are very sweet and nutritious. Constant grazing on them has destroyed the grass over vast sections. Sheep eat very close to the roots, and the grass has had no chance to reseed." This is from United States Secretary of Agriculture, Mr. Wilson.

Now it appears that the authorities have made many experiments with forage seeds, and have even imported seeds from Africa for this purpose, and on those lands where they have had a chance have succeeded in restoring verdure to the plain; but the majority of the graziers will permit of no interference with their continuous use of the lands; in fact they will not allow a "close" time. Surely one would think the Government was strong enough to arrange this matter, but it does not seem able so to do, and it appears hopeless to appeal to the common sense of these cattle owners. They may be all right for the present, as a diminished supply means higher prices. Since 1890 there has been a decrease of 25 per cent. in the total number of stock, and who can tell when it will cease with depleted worn out pastures?

With the food-producing areas of the world rapidly diminishing, and the population increasing, there will be a difficulty soon somewhere. Statesmen will find the hungry mob awkward to satisfy, and unless irrigation of desert tracts gives a fresh extension, or new methods of cultivation are resorted to, or the growth of the population checked, we shall soon enter upon a period of food scarcity, and we shall take very badly to that after all these years of liberal supply, for whatever else may have been dear, food, good, wholesome, and cheap, has been brought to our very doors. Some of us would like to have seen it a wee bit dearer, but after all the majority have been the gainers, and a well-fed people are generally a contented people.

Work on the Home Farm.

We have ice a quarter of an inch thick this morning, so hope that at last we may have a spell of frost. That we should is most desirable, for the wind and storm of last week, accompanied by deluges of rain, have made work on the land well nigh impossible. Lying fairly high, we are not flooded as farmers so unfortunately are in many parts, but the land is too soft for ploughing, and carting manure would be horse-killing work.

The wet autumn has much increased the consumption of bedding in the open yards, and they are getting rather full of manure, so a frost sufficient to make carting easy work would be very convenient just now, and if it were to continue for a longer period than is required for such work we should not grumble, for horses have been very hardly worked and would do with a little rest. Besides this, frost would do good in many ways. The land is so wet and sodden that a good freezing is absolutely necessary to bring it again into workable condition. Corn stacks, too, are damp, and the grain out of condition. A good frost with drier condition of the atmosphere would soon put them right.

Sheep are still doing very well. Lair is not so good as it was, but we have seen it far worse, and indeed it is rather surprising considering the weather. Perhaps it is owing to the animals having plenty of room to fall back on. The plough must be kept off Turnip land until it is dry again, for nothing is so fatal to a Barley crop as sowing it on land which has been ploughed wet.

We hear rumours of considerable sickness amongst horses, partly owing to bad stable accommodation, but partly as a "vet." tells us because farmers forget that the horses require a little rest sometimes. Some farmers have much ploughing still left on hand; one told us he could do with twenty extra horses for a month. A suggestion of steam help was received with scorn. Steam cultivation seems to be much out of favour in some districts.

There is likely to be a boom in pigs; dealers are buying up suckers three or four months in advance, to be delivered at eight weeks old at £1 per head.

Training Farms for Young Englishmen.—One of the great difficulties which young Englishmen have to face in leaving England for the Colonies is lack of experience. To meet this want the Government of New Brunswick have established a training farm, at which educated young men may receive a thorough training in agriculture with an outlay of between £30 and £40. This sum is to pay for breakages in farm machinery, which usually suffers more or less in the hands of a beginner, at any rate during the first year. The farm is, however, worked so as to be self-supporting; it consists of 900 acres, and it is in charge of an Englishman, Mr. A. W. Pratt, a graduate of Cambridge and of the Royal Agricultural College at Cirencester. It is inspected from time to time by Government officials, who see that nothing is neglected in the way of modern improvements. The idea is so excellent that it is to be hoped other Colonies will follow New Brunswick's example. Full particulars of the scheme may be obtained from the Hon. C. A. Duff Miller, the Agent-General, 17, Leather Market, London.

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Journal of Horticulture.

THURSDAY, JANUARY 17, 1901.

Undersized Fruit.

HERE was far too much small comparatively worthless fruit produced last season. To make matters worse, this tendency to overcrop is far-reaching in its effects, and if not repeated next year, the weather—not the trees—will be to blame. A few of the naturally grown trees—that is to say, those which are not annually mutilated by the overzealous pruner—may have become too weak to produce flowers even, but the majority are again crowded with flower buds, and unless they receive proper attention, more especially at the roots, the crop may once more prove most disappointing. Many orchard trees in this country, especially in Gloucester, Somerset, and Devon, are in a state of starvation, and in few instances are attempts made to obviate this unfortunate state of affairs. In many cases, owing to the dense covering of grass, the established trees are never properly moist at the roots, and what little moisture does get through the fibrous top spit is instantly exhausted when the trees are in full leafage. The trees are expected to continue cropping satisfactorily year after year, but nothing is done towards bringing about this desirable state of affairs.

It is too much to ask those who rent or own trees planted on good grazing land to break up the turf and cultivate the surface, but they have only to take note of what is going on in the mixed or cultivated orchards to find why their trees fail. Where the trees stand 30 feet or more asunder the herbage is doubtless of considerable value, and it is only fair to add, that it is not these large, well isolated trees which are the greatest offenders in the direction of producing too much undersized fruit. In the majority of orchards the trees press against each other above the ground, and fight each other for food and moisture below. Quite recently, however, I met with an instance, not far from Stratford-on-Avon, where an orchard, five acres in extent, and somewhat closely planted with Plums, Pears,

During FIFTY-TWO YEARS the "JOURNAL OF HORTICULTURE" has been written by Gardeners for Gardeners, and in its principles, its practice, and its price it still remains the same. One alteration is perhaps, however, necessary. Our modern methods of production have rendered the price old-fashioned, and hence in order to meet the wishes of the present generation of Gardeners the "JOURNAL OF HORTICULTURE" will hereafter be sold for TWOPENCE instead of Threepence.

and Apple trees, had been converted from a comparatively unprofitable to a most profitable state, simply by means of surface cultivation. These trees are about fifteen years old, and in spite of being planted on a cold, retentive, slate coloured, clayey soil, have made good progress. Admitting warmth and air, which the grass excluded, rather than moisture to the roots, in this case had a remarkable effect on the productiveness of the trees.

We learn that in the United States of America not only do they cultivate the ground about the trees, but they also raise a crop of Vetches or other sheep-feed in the spaces between the trees, which is duly folded and fed off. In addition to the green food cake is given to the sheep, the latter when sold paying for the labour and outlay in feeding stuffs, while the trees have the full benefit of the sheep manure, which thus obtained is composed of the very elements—nitrogen, phosphoric acid, potash, and lime—most required by fruit trees. In some of the cultivated orchards in Essex and Kent I observed last season that the trees were not only bearing heavy crops of fine fruit, but had made good growth notwithstanding the great strain on them. This offered such a strong contrast to what I had previously seen in the western Midlands, that I naturally made inquiries as to the treatment they receive. In all cases these profitable trees are kept well thinned, and a little foreshortening completes the pruning; no cutting and hacking every ten years, or thereabouts, but a little annual pruning is all that is needed. I need hardly add that the roots get something stronger than water to keep them in such excellent health. The best results attend the practice of applying a liberal dressing of a mixture of blood, bones, and various other strong smelling materials, which can only be conveyed down the Thames in barges, and must not be applied to the ground near to dwelling houses of any kind.

Poultry farming has evidently gained many adherents in all parts of the country, and the fruit trees on the same land ought soon to derive great benefit from the association. Fowls' manure is especially rich in nitrogen and lime, with phosphoric acid and potash in a lesser degree. At the outset it may be possible to make the land too rich in nitrogen, sappy growth resulting; but when the trees are cropping heavily and not making much wood growth nitrogen must be applied, as without this, if I understand rightly, the trees do not form sufficient leaf growth to utilise the potash, phosphoric acid, and other elements that may be present in the soil. Liquid manure, notably the drainage from a mixed farmyard, also from stables and piggeries, presents the readiest means of supplying the roots of fruit trees with all that is needed in a quickly available form, and the best time to apply this is during the late autumn months, and also whenever the weather is mild during the winter. Trees treated in this way start into growth more strongly than they otherwise would have done, the flowers are larger and of superior development, wood growth is promoted, while the crops that set and escape frosts will be at least of fair if not of superior quality.

Basic slag is being largely and freely distributed among fruit trees in Gloucestershire and other parts, and this is a step in the right direction, but it supplies phosphoric acid and a little lime only. A more complete food is needed. Special manures bought ready mixed are recommended for use where there are only a few trees, but on a large scale I would advise purchasing and applying manures separately, chain harrowing them in at once. A fairly large orchard tree should have 2 lbs. of either nitrate of soda or sulphate of ammonia, and the same quantity of superphosphate of lime and kainit, reducing these according to the sizes of the trees dealt with. The two nitrogenous manures mentioned are the most quickly dissolved, and a portion may be washed away before the trees have a chance to assimilate it, hence the good advice often given to apply one part of these some weeks or even months later, only it should be applied in time for it to be washed down to the roots.

Those who apply manures of any kind to large fruit trees ought to remember that the feeding roots are principally at the extremities or as far away from the stems of the trees as the top of the trees spread, and these therefore who bank up soil and manure round the boles of

trees may easily do more harm than good. By all means apply farmyard manure freely, but let it be as a surface dressing and not in the form of a bank round the stem as seen occasionally in different parts of the country. In conclusion I would state that if we could only keep our trees in a healthy growing condition, extra heavy crops would rarely if ever be produced, but what is much more to the point, they would be equal to producing a remunerative crop of full sized fruit every season.—W. IGGULDEN.

Gloriosa superba.

If there is one plant more than another that attracts attention in either a warm greenhouse or stove during the summer months it is the peculiar, but fascinating, East Indian *Gloriosa superba*, with its delicately whorled flowers of a rich shade of lemon tinged with red, which make a wonderful table decoration, or rank high in a collection of stove or greenhouse cut flowers, or in a collection of plants. When used as a cut flower it will stand for a considerable time in water; a plant, if allowed to occupy a good position on the roof, yielding unlimited quantities of bloom until the growths die down. That it is absent from many collections no one will deny, and I remember the sensation caused at one of our Liverpool shows a few years ago by a grand plant exhibited by Mr. T. Hitchman, gardener to Arthur Earle, Esq., Childwall Lodge, Wavertree.

The cultivation of the *Gloriosa* is not at all difficult, and plants may be either raised from seeds or by root division. If from seeds the middle or end of February is a good time to sow, the size of pots used being 5 inches, draining thoroughly. Some good peat, leaf mould, and silver sand form a suitable compost, and after filling up nearly level and pressing firmly, the seeds may be sown and lightly covered, watering carefully, and placed in a propagating box in about 75°. Germination will soon take place, and care should be exercised at this period not to allow too much moisture about the seedlings, or they soon decay. When the young plants are through remove to a shelf, watering sparingly, and as soon as they are 2 inches high they may be transferred to 3-inch pots, adding a little good loam to the previously mentioned compost. If a little bottom heat is at command so much the better for encouraging root action, but care is needed, or the plants become drawn, and are never satisfactory afterwards. When full of roots remove to 6-inch pots, this being most suitable for the first season. When growing during the summer more water will be required, and frequent syringings morning and afternoon, staking as growth advances, and tying to the wires on the roof of the house in which they are growing.

The latter end of the summer will see the plants showing signs of resting, then it is that the gradual decrease in watering must take place until it is discontinued altogether, when the pots may be stored for the winter in a moderately dry part of the house. The following season, about the middle of February, they should be examined to see if the bulbs are sound, and introduced to a brisk heat to start them into growth. When this is discernible repot into 10½-inch pots, using fibrous loam, peat, coarse sand, and some broken pieces of soft red sandstone, giving sufficient water to settle the soil. Syringing and a fair amount of water will be required during the summer, and almost the same routine followed until the plants die down.

If for cut flowers or the decoration of a stove roof the *Gloriosa* needs little attention when once it reaches the wires, the points of the leaves clinging as they grow. If as a pot plant for exhibition, the trellis should be affixed before the growths get too long or much damage is done. Keep well elevated to the glass, and do not omit the syringing, tying the shoots as evenly as possible throughout. For specimens of this kind it is well to see that several bulbs are placed in each pot, as this tends to a better furnished specimen. Occasional applications of weak liquid manure will give a great stimulus to the strength and quality of growth and flower. Propagation by division is as easily effected as in the case of *Dracænas*, and needs no detailed treatment here. Those not having grown this charming plant may shortly get started plants at a moderate cost from any good nurseryman, as by doing so the bother of growing from seeds is saved and satisfactory results obtained during the coming season.—R. P. R.

*Cypripedium insigne.*

A FEW days ago I called to see Mr. F. Pheby, gardener at Belmont, Otley, the residence of Thos. Duncan, Esq. I saw there three specimens of *Cypripedium insigne* well worthy of comment. I have great pleasure in sending you a photograph taken by Mr. Duncan, jun., of one plant which carried thirty-six blooms; the three plants carried about eighty-five. Remarkable to say, these plants have in no way been done up for a period of twelve years, and Mr. Pheby informs me that the three plants are each about twenty years of age. The largest plant is growing in a 10-inch pot. The surface is one complete entanglement of roots, rising 4 or 5 inches above the rims of the pot. I remarked about their very healthy condition, when I was informed that they were very liberally treated with guano water during their season of growth.—J. SNELL, *Farnley Gardens.*

Cypripedium Leeanaum.

WITH a little care the blossoms of this fine hybrid may be enjoyed all through the winter, like those of its seed parent, the well-known *C. insigne*. Its other or pollen parent was *C. Spicerianum*, and the influence of this, as is well known, is very marked, while the plant is of such an excellent habit that its culture is of the easiest. To grow it well one wants a sufficient stock of it and similar hybrids to fill a small house or compartment, and let them have it to themselves. They like ample light, and are not at all averse to a fair amount of sunshine, in this respect differing from the fine leaved forms, such as *C. Lawrenceanum* and others.

If a little skill is used no one need be afraid to divide this hybrid freely, and a large plant of it carefully manipulated will in a very few years be transformed into a healthy and thriving stock. It is best to wash away the greater portion of the compost, as this bares the whole of the roots, and then injury is not caused them by the use of the knife. It is easy to see, too, where the most convenient places for division are situated. Use a thin bladed knife, and cut through the rhizome without injuring either roots or leaves. Pot the plants singly, and place them without delay in a rather closer and moister house to that they have been accustomed to, and in a few weeks healthy growths will form.

The compost for these divided portions ought not to be quite as heavy as for established plants, a little more sphagnum moss than usual being an advantage. When really well established and strong at least one half the compost may consist of fibrous loam, working up with peat or leaf mould and chopped sphagnum. To keep the bulk in a sweet condition add an abundant supply of crocks or ballast and the plants will do well. Spread the roots out and work the compost in between them with the fingers, as the roots are more persistent than those of most Orchids, and possess in a greater degree the power to catch hold of the soil again after disturbance.

The compost of these strong plants need not be rounded on the surface, but the crowns kept a little below the rim of the pot as in ordinary potting. The divided portions may perhaps be elevated a little, but if the lighter material is used they will take no harm. Water the compost at once, and when the roots begin to run freely in this allow a little more air. If no Orchid house is at command the plants thrive equally well in a light stove or warm greenhouse, and during the summer months in vinerias or other houses. So that there is no reason why anyone possessed of a few plants and a suitable structure should not work up a good stock of this, certainly one



CYPRIPEDIUM INSIGNE.

of the finest, though one of the oldest hybrid *Cypripediums* in cultivation.

Dendrobium Schneiderianum.

THE hybrid *Dendrobiums* are a most beautiful class of Orchids, and will soon be flowering. The above is one of the earliest, and I noticed it in bloom recently. A cross between *D. Findlayanum* and *D. aureum*, the flowers are intermediate. The sepals and petals are most like those of the former parent, being rosy white with a distinctly deeper tint of colour on the tips, the lip is closely covered with minute hairs, and is yellowish with purple markings. Its parentage suggests the likeliest mode of treatment—viz., heat and moisture in abundance while growing, early ripening, and a good rest, and this will be found suitable. It may be freely propagated by cutting up the stems in the manner I have often described in this column.

Starting *Calanthes*.

THE time will soon arrive when *Calanthes* must be started into growth, and their perfect success or failure depends to a very great extent on their treatment. I have known splendid pseudo-bulbs spoiled by a bad start, in one case in particular, where the pseudo-bulbs were potted, immediately watered, and kept so constantly; but it did not suit them, as the roots were long in forming. When they pushed forth they were few and weak; they continued sickly all the season, and at the end of the year the new pseudo-bulbs were extremely poor, and had little resemblance to their parents of the previous spring.

This, I need hardly say, is a manner of starting *Calanthes* that should never be practised; but if a layer of sphagnum or other moss is placed at the bottom of some shallow boxes, the pseudo-bulbs stood upright on this, a little more moss packed between to make them stand, and then placed in a temperature of 65° to 70°, sparingly watered, they will soon root freely, and send out strong, healthy side shoots that will form the pseudo-bulbs for flowering. As soon as they are fairly started they should be taken from the box without injuring the roots and potted. Some of the moss will adhere to the roots, but this will not do them any harm, particularly if it is sphagnum. The potting material should be rough, and they ought to be put into pots that will admit of their being repotted into larger ones later on.—ORCHIDIST.

Phaius grandifolius.

THIS old but useful Orchid, so often despised by those who are ever on the look out for novelties, proves to be an invaluable plant for conservatory decoration. If kept on the dry side while in these structures the complete rest while in flower is very beneficial. In repotting I shake the whole of the old soil from the roots and place the plants in a compost of loam, peat, sand, and a little decayed manure. After potting care is needed at first not to give them too much water, and the syringe should be used with caution. If scale is noticed on the leaves sponge thoroughly before potting.—G.

Dendrobium thyrsiflorum.

THIS is usually an easy plant to manage, and yet we often hear of its failure to bloom. While it is growing it should be helped as much as possible to make a strong, unchecked growth until December, when it should begin to rest. In January and February the plants must be dried until the pseudo-bulbs show signs of shrinking, and then water should be given. If this is kept up the bulbs ought to be 1 or 2 inches long by the middle of February. If dried too completely the buds shrivel; if kept too moist new growths are encouraged at the expense of flowers.

Dendrobium Hookerianum and *D. Dalhousianum*, in order to be flowered successfully, need more severe drying. If treated as evergreens they flower sparingly. Indeed, I have known specimens of *Dendrobium Dalhousianum* to be 5 feet high that have not bloomed for years. With a good root-system, and large healthy pseudo-bulbs a little shrivelling does not hurt them in the least.—G. F.

A Peep into Old Catalogues.

THOSE who can recall to mind nurserymen's price lists of thirty or more years ago, and comparing with them those of the present day, must be struck with the change. Then they were mere price lists; now they are, or at least the best of them, full of matter deeply interesting to those fond of gardening, and the illustrations, alike in British and American issues, keep pace with the most advanced phases of book illustration.

If we go back a century or more, the difference comparatively is not so great as many people have seen in the compilation of sale lists in the course of their lifetime. None of the old catalogues I have examined extend in size beyond small octavos, and generally consist of only a few pages, though that of Gray of Fulham (1740), extends to over fifty; but it includes botanical descriptions of the trees and shrubs offered, and contains very full lists of fruit trees, which generally are noted collectively, without as here naming the individual varieties. This is not a priced catalogue, nor was it common to insert prices. It must be remembered that nurserymen's lists in those days could not be distributed throughout the length and breadth of the land, but they formed a very useful medium for informing clients when the nurseryman called of the goods he had to sell, and prices could be given either verbally or noted opposite the plants required by the customer. An eighteenth century list of Dickson & Brown, of Perth, has the prices inserted in this way, and the name of the inquirer, with date, is added, not improbably for subsequent reference.

Nor are all the old catalogues dated. The Telfords, of York, have the century on theirs; others have the decade as well as the century, and some are absolutely without date. Florists and Dutch bulb merchants appear to have been the only horticulturists who added new varieties annually to their stock, and consequently they required to revise prices. In the case of general nurserymen and seedsmen the stock scarcely ever varied, nor were prices subject to fluctuation, hence lists once printed would serve for an indefinite period.

Prices were naturally lower than at the present day. Seedling Scots Fir for example sold at 1s. 6d. per 1000, single plants of Arbutus at 1s., Daphne mezereum 2d., Roses from 2d. to 6d., Apples 6d. to 1s., Gooseberries 1d. and 2d., Plums 8d. to 1s., and Vines 9d. to 1s. 6d. Half-a-crown was a high price for a single plant, but in one case we find the double Cape Jasmine (Gardenia) at 7s. 6d.; that, however, is a solitary exception. In the case of vegetable and flower seeds, I have never seen a priced list; they were simply a bald enumeration of names, without any description. But there was ample opportunity for a choice of sorts. Thus in Drummond's (Edinburgh, 1754) there are enumerated—of Onions and of Turnips seven sorts of each, of Radishes six sorts, of Lettuces eleven sorts, of Spinach four, and of Cabbages ten; Early York, Battersea, and Sugarloaf among the last named showing that good quality was in these days a not impossible quantity. Peas are represented by two dozen sorts, and a fair number of French and Broad Beans, and other vegetables in proportion. It is somewhat startling to discover as fit subjects for the kitchen garden Virginian Tobacco, White Poppy, Columbine, Balm of Gilead (*Dracocephalum Moldavicum*), and other plants equally unlikely.

The flowering plants most extensively cultivated, if we are to trust these old trade lists, were annuals, with a very few perennials, a limited number of bulbous plants, and Carnations. Sweet-scented flowers and those with bright colours were evidently most in request. Thus we have double "Hollyhocks," several varieties of Pinks, yellow and bloody (dark crimson) Wallflowers, numerous varieties of Stocks, Balm of Gilead "Migionet," sweet-scented Peas, sweet Allison (*Alyssum maritimum*), many Lupines, China Asters, Sunflowers, African, French, and Cape Marigolds, Sweet William Rocket (*Hesperis matronalis*), and the double yellow and double white Chrysanthemum coronarium. Among others now forgotten, but then very popular, are Belvidere (*Chenopodium scoparium*), Persicaria (*Polygonum orientale*), and Wing Pea (*Tetragonolobus siliculosus*), at one time planted also in the kitchen garden. "Snails" were also popular, as were also "Caterpillars" and "Hedgehogs." *Medicago scutellata* may be accepted as the type of the first named, though several varieties were in cultivation, *Scorpiunus vermicularis* the second of these, and *Medicago intertexta* the last named. Parkinson called them "pretty toys for gentlewomen," and to Gerarde we are indebted for the origin of "Snails," the seed vessels, as he says, being like "water snayles." Lyte also mentions them, and it is certain that these plants, which had nothing to recommend them apart from their curiously formed seed vessels, must have retained their popularity for a long extended period.

Attached to gardens at the time to which these notes refer was a semi-wild enclosure called "The Wilderness," furnished mainly with

flowering and evergreen shrubs. Hence the reason that these are represented very fully in old catalogues. Jasmines, Honeysuckles in great variety, *Cratægus*, Cherries, Spindle-trees, Sumach, Buckthorns, and *Cytisus* are a few of the genera chiefly grown. Names less familiar appear in *Cytisus secundus* (*C. sessiliflorus*), *Hypericum frutex* (*Spiræa hypericifolia*), Virginian or Two-thorned Acacia (*Robinia pseudacacia*), Red Robinia (*R. hispida*), Cinquefoil Shrub (*Potentilla fruticosa*), and Shrubby St. Peter's Wort (*Symphoricarpos vulgaris*). Among stove and greenhouse plants such out of the way designations occur as Cynaria or Skyflower for *Agathæa cœlestis*, Sea Ragweed for *Centaurea ragusina*, *Amum Plinii* for *Solanum capsicastrum*, and Heath-leaved *Alaternoides* for *Phyllica ericoides*.

The lists generally indicate the improbability of much brightness in the greenhouses of the eighteenth century. But such as were the plants the limits of their cultivation were not confined to towns or cities, and it is at this time of day matter for surprise to find a fairly complete collection of greenhouse plants named in the catalogue of Dickson of Hassendean Burn, an out of the way village in Roxburghshire. This nursery is further interesting as being the parent whence offshoots were established at Perth; the Broughton Nursery, Edinburgh; and "Dickson's," Chester.

The trade list of Andrew Lockie, Kelso, is the smallest of all merely two sheets of note paper stitched together, but his stock was more extensive than his list is inviting. It opens to view a class of customers not catered for generally—namely, cottagers to whom flax and lint seed is offered. He sold also hops and "issue" Peas, and recommends French Furze as a crop to improve land.—B.

Begonia Caledonia.

HAVING seen this fine novelty occasionally during the past three years in Mr. Forbes' Nurseries at Hawick, I can hardly allow the remarks of Mr. R. Dean (page 551, last vol.) to pass unnoticed. Your correspondent remarks, "Caledonia has to vindicate its character as a white during the coming year. Some persons think the award of merit (R.H.S.) was too hastily given a year ago." I saw the eighty odd plants staged for the inspection of the Floral Committee in October, 1899. They were not large plants certainly; yet anyone who knows *Gloire de Lorraine* could see at a glance that Caledonia had all its good qualities, differing only in colour, which is a glossy ivory white. The committee, however, was not to be taken by storm, and no special honour was then attached to it. With others I was more than surprised at this, as the committee had a few weeks previously given an award to a pink form of *Gloire de Lorraine*. Perhaps this was exhibited a few times? It would be interesting to know this, as there are several pink forms already in the market. I grow two, a few panicles of which, with Caledonia, are sent for inspection. The pale pink variety, *nana compacta*, is much more compact and more floriferous than the type. I procured them from Mr. Forbes, who was, I believe, the first to exhibit *Gloire de Lorraine* in this country.

I well remember the first time I saw it in his nurseries in 1893. I took to it at once, and predicted at that time a great future for it, and from what I have seen of Caledonia I have no doubt whatever that ere long it will become quite as popular as its parent. The white form is a real boon to makers of wreaths and bouquets in the dull winter months, when graceful white flowers are none too plentiful.

As decorative plants they have no equal at this season; to see a house full of the two, as I saw them last autumn, is a sight to be remembered. In one of Mr. Forbes' houses I saw upwards of 5000 plants of Caledonia, and this was in itself a rare treat. The plants, in 3, 4, and 5-inch pots, were smothered with pure white panicles. They were on shelves round the house, hanging down in free and easy fashion. Caledonia has since been distributed, and is now in many lands. From American horticultural papers I see it has been exhibited several times over there, and was awarded certificates, and is spoken of as white. Surely after the score or so of certificates with which it has been honoured it is just a little late in the day to blame the R.H.S. for being in a hurry in giving it an award of merit.

But, after all, what are these certificates worth? A sterling article, whatever name it may be known by, is bound to come to the front, independent of certificates or anything else. A case in point is *Gloire de Lorraine* itself. Sheer merit has made it everybody's plant, and it does not say much for the British public that it took at least three years before its merits were fully appreciated. Evidently its white offspring is, according to some, to be subject to the same fate.—NOVA BENA.

Impostors' Grafting.

MANY persons who understand that grafting is a useful and ordinary way of increasing plants do not, however, clearly comprehend the limitations which Nature has put to the indefinite application of it. Those who are a little wiser than their neighbours in this respect frequently try and impose upon the credulity of their friends by telling plausible hoaxes about grafting, while some are to be found who repeat in good faith absurdities which have been disproven again and again, but reappear with a vitality exceeding that of the proverbial cat. Thus, there are many who are still capable of swallowing the story of the Orange becoming blood-red in consequence of its being grafted upon the Pomegranate, and that fable of the Rose growing black when ingrafted upon the stock of the Black Currant bush.

A good classical education has not preserved so-called educated persons from making themselves ridiculous in this matter. Many years ago a certain English peer brought home from the classic region of Italy an Orange tree, wherefrom there emerged a Jasmine, a Myrtle, a Honeysuckle, and an Olive. The old Latin writers having asserted that they had seen Apples growing on Plane trees, Vines upon Willows, and Olives upon Figs, this phenomenon obtained credence with many who had had a university education of the old sort, until it became known that the whole thing is a common "plant" (so to speak), played off by Italian impostors upon credulous visitors.

Eighteen centuries ago the Roman naturalist Pliny described seeing a tree in the garden of his friend Lucullus, the branches of which produced Pears, Figs, Apples, Plums, Olives, Almonds, and Grapes. He remarks, however, that it died some years afterwards. At the present day it is possible to purchase from gardeners in Italy stocks, such as the Orange, Myrtle, and Pomegranate, out of which are growing Jasmines, Roses, Honeysuckles, and other unrelated plants. There is, however, no genuine grafting. The stock is a mere hollow cylinder, through which the stems of the others are drawn, so that the roots of all commingle below, while the branches intertwine above. The Chinese are more skilful than the Italians in this particular, for they can make the Photinia (which is a Thorn) grow upon the Juniper, and the Myrica upon the Pine.

It would be well, therefore, for readers to remember that plants require to be very closely related in order that the grafting of one upon the other may succeed. Indeed, the most ordinary and useful application of the principle is made in one family—the Rosaceæ—and though the grafting of plants in other orders can be effected, it is not common, and often is merely of an experimental character.

The Rose, the Hawthorn, the Apple, the Quince, the Medlar, the Pear, the Plum, the Green Gage, the Apricot, the Almond, the Peach, the Nectarine, the Cherry, the Mountain Ash, the Wild Service Tree, and others all belong to the order of Rosaceous plants. Even as between these cited above there is not that affinity which suffices to make successful grafting practicable between them all. The Rose must be grafted on the Brier or some form of Rose stock, the Apple on the Crab or some form of Apple stock; the Hawthorn, Pear, Quince, and Medlar are, roughly speaking, interchangeable on one another's stocks. The Peach, Nectarine, Apricot, and Green Gage succeed best upon the Plum stock, though they have an affinity for that of the Almond. Pears and Peaches can also be grafted upon the Mountain Ash. Cherries must be grafted upon the Cherry stock exclusively.

The only other family in which there is made a general application of the principle of grafting is the Aurantiaceæ. The Orange and the Lemon being kindred fruits, and, like those before mentioned, desirable of increase on account of their utility, grafting has been practised as a speedy method of diffusing new varieties. This is, indeed, the great service of grafting. Every new variety of fruit or flower is procured by cross-fertilisation of the flowers. Then from the seed come the seedlings. These would, however, seldom bear fruit sufficient for the demand, so their branches are cut off in scions and grafted separately upon kindred stocks of which there is an unlimited supply, each becoming a specimen of the new variety.

Before, therefore, people believe extraordinary stories about grafting different plants upon each other, they should first ascertain their relationship. In almost every case the relationship is a very near one. The Cherry will certainly take upon the Laurel, the Lilac upon the Ash, the Olive on the Phillyrea. The Lilac has been grafted upon the Phillyrea, the Olive upon the Ash, the Bignonia upon the Catalpa, and even the Pear upon the Apple. When, however, it is asserted that plants of entirely different families such as those mentioned by the Latin writers, or those exhibited by the Italian manipulators of the "Impostors' Graft" instanced above, can unite, or that the Orange can be grafted upon the Pomegranate, experience contradicts it, and one may safely say the statement is untenable.—M. H.

Early Radishes.

DURING the early months of the year Radishes are scarce, mainly owing to the lack of conveniences and facilities for growing them. With frames, soil, and hotbeds their culture for the next three months is simple, but to insure a regular and continuous supply of tender roots of good colour and excellent flavour they must be grown quickly, sowing the seed thinly in small quantities at a time.

Hotbeds that will afford a gentle and continuous heat for a length of time are the best. The materials most suitable are leaves and horse manure. For preference use Oak or Beech leaves, as these decompose more slowly than other leaves do, and check the rapid heating of the manure. Mix all well together, and when the heap has fermented for several days turn the materials over, throwing the inside of the heap to the outside and *vice versa*. This insures regular fermentation throughout. The heap is then ready to be formed into a hotbed, which for early work should be inside a brick frame, but if a hotbed has to be built for accommodating a frame on the top it should be made wider than the frame, so that linings of fresh warm materials can be added as necessary in order to maintain a growing temperature. In placing the materials together make them firm, as by this means will the heat be steady throughout the period of growth. When the bed has been formed a covering of soil to the extent of 4 inches may be placed upon it, using that of a light, friable character free from stones or anything of a rough nature.

Sow the seeds broadcast, and as the roots are perfectly useless if crowded, it is simply waste of labour and also seed to sow thickly. After sowing cover the seeds lightly with fine mould. Afford a gentle watering with tepid water to induce early germination, keeping the frame close until the seedlings appear. Air must then be given as freely as the weather allows. The surface of the bed may be within easy distance of the glass when the bed is first formed. It will sink gradually as the materials decompose. The long-rooted varieties are the best for forcing, excellent varieties being Wood's Early Frame and Sutton's Earliest Frame. The white, crimson, and carmine olive shaped varieties are good. Among these the French Breakfast, of which there are many selections, are all more or less suitable for frame culture as well as early sowing outdoors.—E. D. S.

A Water Lily Pond.

THE accompanying ground plan and sections refer to a certain "piece of water" and its surrounding ground. The formation and planting is more or less explained in the references, therefore it will suffice to observe that the lake or widened streamlet is situated at the bottom of a valley or dell, and flanked on each side with trees and shrubs for shelter. Between the walks and water no tall plants are employed—thus the observer has unobstructed view of the lake and its occupants. The paths are also so arranged that the aquatic plants may be inspected at close quarters.

The aim of the plan and sections is to suggest adaptation to positions other than natural ones, and on land not holding water. Idea of form may be gleaned from the ground plan, and measure of depth deduced from the sections. According to the area and levels will be the amount of soil excavated in making the pond and streamlet. This material can be utilised in forming mounds, and as these imply hollows, something, even on a flat site, in the way of hill and dale, of dry places and damp spots, may be produced. In forming banks and mounds the excavated soil is often "tipped" upon the good surfacing mould with the result of relative sterility. This should be avoided, by first removing the top soil and placing it aside conveniently for surfacing the mounds after being shaped with the indifferent excavated material. The top spit mould, or as deeply as good, should also be laid aside, reserving it for forming banks or mounds, or for providing good earth where planting is contemplated.

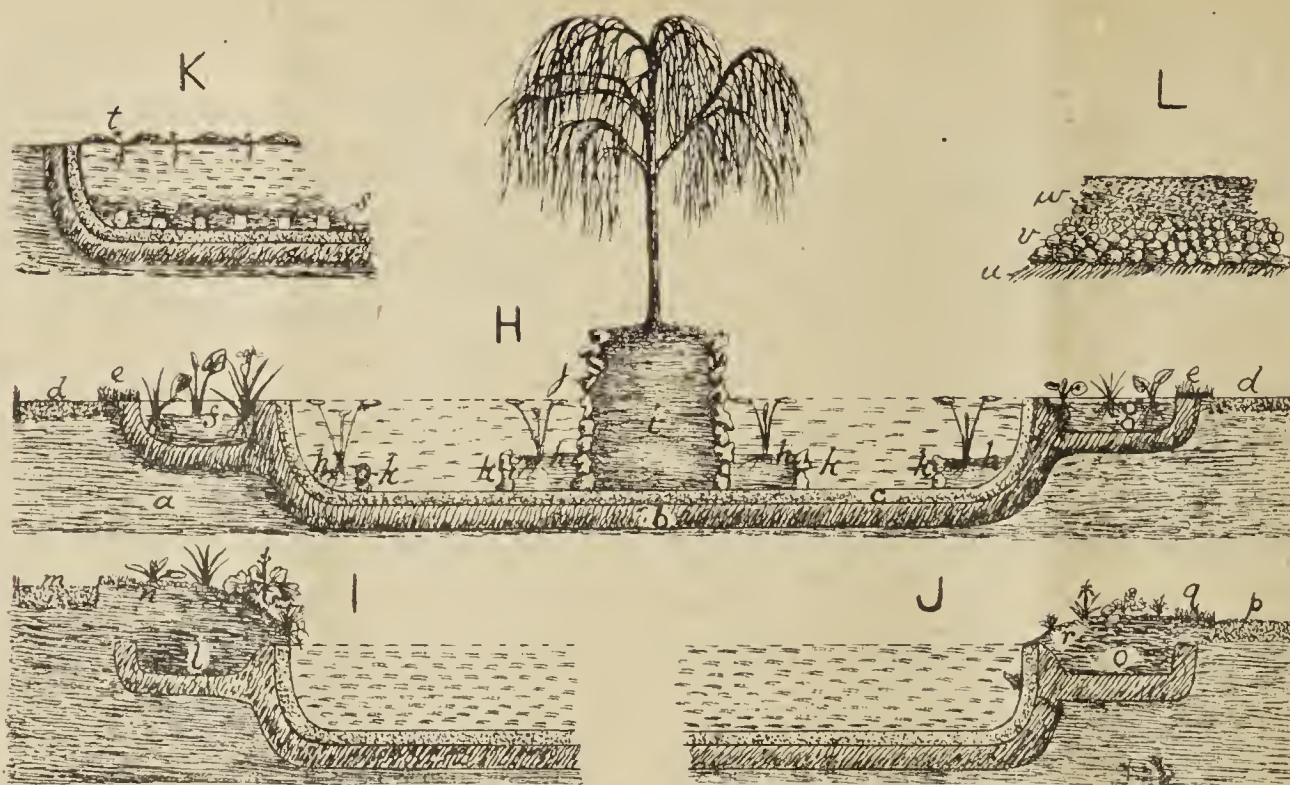
Having made the excavation, the next process is to clay the bottom and sides. All the claying must be on solid ground. If properly puddled the thickness of clay shown in the section *H* at *b* will be sufficient. These ponds are liable to have the water muddled by waterfowl, and even where they are excluded aquatic plants are given to run all over the bottom and sides. Besides, the intention is to form a rock-pond, have clear water dotted with Lilies, therefore it is cement-concreted. What, and clayed? Yes; I prefer to make doubly sure, for I have found empty cemented lakes much prone to cracking, and to stop the rifts and rents so as to not let water out is one of those things I have often seen attempted but not once effected.

For the grand Water Lilies pockets of pigeon-holed rockwork are

provided. The aim, remember, is not Nature, but culture. Of the system, let it suffice to say that the Lilies mark their appreciation by thriving splendidly. That is the grand secret. In the pond proper the Lilies rule supreme. Between their pockets fish may "roam" beneath the Lilies' amply shading leaves, while these do not occupy the whole of the surface of the water, but leave some of it for sunbeams to glitter on.

At the sides, here and there, basins are provided for medium-deep and shallow-water aquatic plants. The first is shown in the section *H* at *f*, and the latter at *g*. Sloping banks are represented in the sections *I* and *J* for accommodat-

ing waterside plants at the heights they appreciate, above high water mark. It is, however, only advisable to have such banks here and there, as grass, shown in the ground plan at *D*, up to the water edge is generally most pleasing, especially opposite where the Lilies are located. On the banks are dales and hills, damp spots and dry places, indicated on the ground plan at *F* and *G* respectively. The setting of whole is emerald grass. Aquatic plants like good fare, especially Nymphæas. Turfy loam, with the herbage reduced four parts, decomposed manure one part, and of rough sand a part, mixed, answer well. Land plants must have suitable soil in order to thrive



SECTIONS OF PORTIONS OF WATER LILY POND.

- H.* Section through at dotted line on ground plan:—*a*, natural stratum; *b*, clay (puddled); *c*, cement concrete; *d*, paths; *e*, grass verges; *f*, basin for aquatic plants, with about 6 inches depth of water; *g*, basin with about 1 inch of water, or just flooded; *h*, pockets for Nymphæas; *i*, pocket for *Salix babylonica* or other desired island or waterside tree; *j*, rockwork bonded in cement, but pigeon-holed; *k*, pigeon-hole rockwork. (Scale, 1 inch = 12 feet.)
- I.* Section of side of pond 2 to 3 feet above water level:—*l*, water holding basin to keep soil wet up to water level on naturally porous stratum; *m*, walk; *n*, bank of good earth. (Scale, 1 inch = 12 feet.)
- J.* Section of side of pond from level of water to 18 inches above it:—*o*, water holding basin; *p*, path; *q*, grass verge; *r*, bank of good mould. (Scale, 1 inch = 12 feet.)
- K.* Section of Nymphæa pockets:—*s*, pigeon-hole rockwork; *t*, overflow of water to shallow water basins. (Scale, 1 inch = 12 feet.)
- L.* Section of concrete on clay (*u*):—*v*, rubble, quarter brick size at bottom and road mettle size at top, run with cement groot; *w*, cement concrete (gravel, broken stone or brick, with enough Portland cement to form, with water, a mortar-like consistency). (Scale, 1 inch = 18 inches.)

roots of plants then get a good hold of the earth, and thrive in measure of the goodness and proper staple.

I will now briefly refer to suitable plants for the several positions. In the pond, ground plan *A*, there are no plants but in pigeon-holed pockets. The two central ones and their centre pockets, one shown in the section *H* at *i*, are raised above water level for a tree in each delighting in water for its roots, and with pendulous branches. If desired, these pockets may be kept below water level, and Reed Mace (*Typha latifolia*), about four plants in each pocket, planted in them. The other pockets, four in one case and three in the other, are reserved for Water Lilies, and also accommodation provided for more at the sides of the pond and certain places, as indicated on the ground plan at *b*, and in the section *H* at *h*. For these positions selection may be made from the following:—

For positions marked *F* on ground plan.

1. Noble herbaceous plants, additional to those in preceding (2 to 3 feet above water level) list.
Bocconia cordata, oval cordate leaves, spikes of cream coloured flowers, 3 to 8 feet.
Eremurus Bungci, yellow flowers on spikes, 4 to 5 feet.
E. himalaicus, raceme of cream white flowers, 6 to 8 feet.
E. Olga, pale purple blossoms on spikes.
E. robustus, pink flowers, scented, 8 to 10 feet.
Onopordon tauricum, purple heads, grandest of Thistles, 6 to 8 feet.
Rheum officinale, immense leaves, very striking, 3 to 4 feet.
R. palmatum var. *tanghaticum*, large, bold incised foliage, 3 to 4 feet.
Spiraea Aruncus plumosus, plumes of white flowers, 3 to 4 feet.
S. lobata (venusta), peach blossom flowers on feathery heads, 3 to 4 feet.
Verbascum Chaixi, enormous panicles of yellow flowers with purple stamens, 6 to 8 feet.

2. *V. Olympicum*, yellow flowers, woolly foliage, very stately, 7 to 9 feet.
3. *Bamboos*.
Arundinaria japonica (Metake), smooth tapering leaves a foot long, stems 12 to 15 feet high.
4. *A. nitida*, short branches, green leaves 2 or 3 inches long, stems 6 to 10 feet high.
5. *A. Simoni*, broad tapering leaves a foot long, stem 12 to 15 feet high.
6. *Bambusa palmata*, broad leaves, 12 to 15 inches long, tapering to a fine point, stems 5 feet high.
7. *Phyllostachys aurea*, sharply serrated leaves 4 to 6 inches long, stems 12 to 18 feet in height.
8. *P. Henonis*, narrow leaves 2 to 3 inches long, stems 7 to 9 feet high.
9. *P. mitis*, leaves of variable size, stems 15 to 20 feet high, grand.
10. *P. nigra*, leaves 2 to 6 inches long, glossy black stems 15 to 20 feet high, grandest.
11. *P. viridi-glaucescens*, bright green leaves, stout much-branched stems 15 to 18 feet high.

- Nelumbium* in variety, in hot and sheltered places in the south of England.
Nuphar lutea, yellow.
N. Kalmiana, yellow.
Nymphæa alba rosea, white rose tinted, free.
N. a. candida, white, medium size.
N. caroliniana nivea, white.
N. Froebelli, crimson carmine, free.
N. Gladstoni, white, robust, free.

- N. Marliacea*, yellow, vigorous.
N. M. albida, white, vigorous.
N. M. carnea, flesh.
N. M. cromatella, yellow, free.
N. M. ignea, crimson.
N. pygmaea, smallest white.
N. Richardsoni, white, vigorous.
N. sanguinea, crimson, free.
N. tuberosa, largest, freest white, very vigorous, and flowering from June to September.

For positions marked *C2* on ground plan, and shown in section *H* at *f*.

- Acorus Calamus* (Sweet Flag).
Aponogeton distachyon, white, sweet scented, floating leaves.
Calla palustris, white spathes like the Ethiopian Lily.
Limncharis Humboldtii, soft yellow flowers, heart-shaped floating leaves.
Nelumbium species and varieties thrive in summer outdoors, and deserve trial as permanent plants in warm spots in the south of England. The following are good species and varieties:—
N. luteum, yellow, fragrant.
N. speciosum, white, fragrant.
N. s. albus fl.-pl., double white.
N. s. grandiflorum album, large white.

- N. s. roseum*, rose.
Orontium aquaticum, Arum-like leaves, yellow flowers, with singular odour.
Peltandra virginica, Arum-like, hard foliage.
Pontederia cordata, arrow-shaped leaves, handsome blue flower spikes.
Richardia (*Calla*) *aethiopica*, white.
R. æ. Little Gem, smaller and profuse.
Sagittaria japonica fl.-pl., arrow-head-shaped leaves, floating, flowers double white.
Typha angustifolia, graceful leafage, handsome cylindrical spike.
T. minima, smaller, but handsome.

For situations, a few to 18 inches above water level, section J.

Acorus graminifolius fol. variegatus, grass-like variegated flag.
Agapanthus umbellatus fol. argenteis vittata, handsome foliage.
Anemone alpina, flowers white, cream, or yellow.
 **A. appennina*, sky blue.
 **A. palmata*, golden yellow.
A. p. alba, white.
Arum italicum marmoratum, leaves blotched with yellow, scarlet berries.
A. i. pietum variegatum, handsome.
Cypripedium pubescens, greenish yellow, beautiful.
C. parviflorum, brown purple and yellow, comparatively small, and fragrant.

C. spectabile, white, blotched rose, beautiful.
 **Gentiana Pneumonanthe*, blue.
Lastrea Thelypteris, Fern.
 **Lysimachia Nummularia*, creeping, yellow.
 **L. N. aurea*, yellow leaves.
 **Mimulus radicans*, white.
 **Primula rosea*, rose.
Orchis latifolia, purple.
 **Saxifraga Fortunei*, white.
S. peltata, white or pale pink.
Spiraea filipendula fl.-pl., double white.
S. palmata, rosy crimson.
S. Ulmaria aurea, gold blotched leaves, white flowers.
Trillium grandiflorum, white.

For positions 2 or 3 feet above water level, section I.

Agapanthus umbellatus, blue or white.
A. u. albidus, white.
A. u. flore-pleno, double.
A. u. maximus, large blue.
A. u. Mooreanus, dark blue, dwarf.
Colocasia esculenta, bold foliage, whitish flowers.
Eulalia japonica foliis striatis, handsome Grass.
E. j. gracillima, graceful Grass.
E. j. zebrina, striped Grass.
Ferula communis, finely divided foliage.
F. Ferulago, fine foliage.
F. tingitana, fine foliage.
Gunnera manicata, bold leaves.
G. seabra, bold foliage.
Gymnothrix latifolia, Grass.

Lilium eanadense, bright yellow to pale light red, curiously spotted.
L. giganteum, white, tinged green outside, purple in throat.
L. pardalinum, orange red, purple spots.
L. Parryi, pale yellow, spotted chocolate.
L. superbum, orange red, thickly spotted.
Lythrum roseum superbum, rose.
Osmunda regalis, Fern.
O. eristata, Fern.
Polygonum cuspidatum, bold growth and panicles of white.
P. e. variegatum, handsome.
P. sachalinense, bold growth, 10 to 12 feet.

* Dwarf plants, should be used for edging or next water.

For positions marked C1 on ground plan, and in section H at g.

Acorus japonicus fol. argenteus striatus, handsome white striped leaves.
Arundo Donax, very handsome Reed.
A. D. variegata, variegated leaves.
A. mauritanica variegata, handsome Reed.
A. Phragmites aurea marginata, leaves margined with yellow.
Catha palustris fl.-pl., double yellow flowers.
Cardamine pratensis fl.-pl., double pink.
Carex pseudo-cyperus, handsome Sedge.

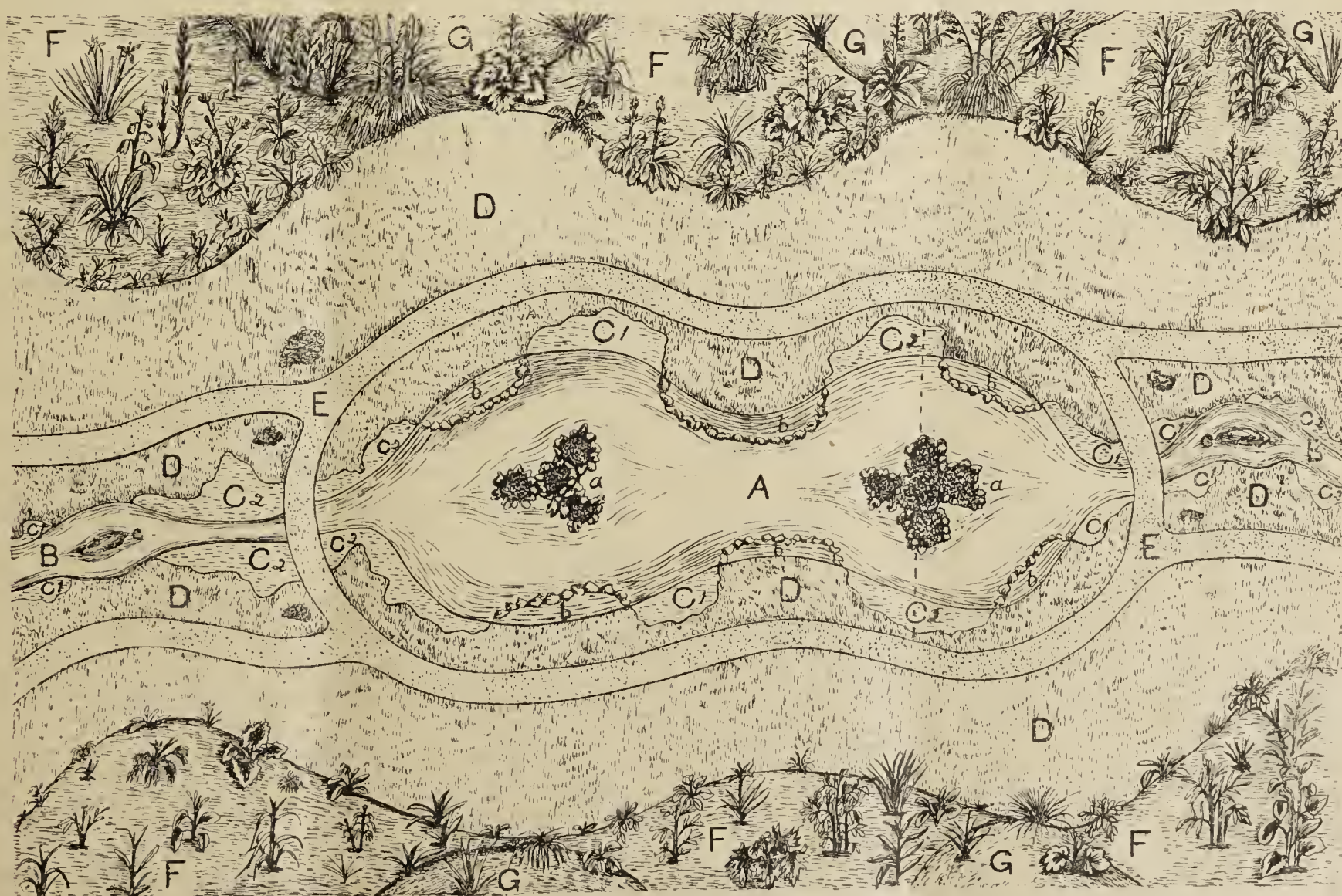
Cyperus longus, chestnut coloured flower spikes, with two or three leaves at base.
Iris foetidissima, lead coloured or bluish flowers.
I. f. fol. variegata, variegated leaves.
I. Pseudacorus variegatus, fine leaves.
Myosotis palustris, blue, yellow eye.
M. p. Tom Thumb, dwarf.
Poa palustris, handsome Grass.
Scirpus Tabernaemontani var. *zebrina*, variegated Sedge-like plant.

For place marked G on ground plan.

Aralia chinensis, terminal panicles of white flowers, pinnate leaves, 5 to 6 feet.
A. racemosa, greenish white raceme, smoothish leaflets, 3 to 4 feet.
A. spinosa, leaves doubly and trebly pinnate, very fine, 8 to 12 feet.
Berberis nepalensis, leaves 1 to 2 feet long, leaflets five to nine pairs, flowers yellow in racemes, 4 to 6 feet.
Chamaerops exelsa, grand Palm.
Dimorphanthus mandshuricus, leaves 3 to 5 feet long, bipinnate, very fine, 6 to 10 feet.
Erianthus Ravennae, a handsome and stately Grass, forming dense tufts, the flower stems rising about 5 or 6 feet high.
Gynerium argenteum, the well known Pampas Grass.
G. a. albo-lineata, white striped.
Phormium tenax, Iris like plant, forming tufts of broad, shining, leathery leaves from

5 to 6 feet high, gracefully arching at the top, flowers yellow, borne on erect spikes.
P. t. Veitchianum, leaves with broad stripes of a creamy white colour, fine.
Yucca filamentosa, apple-green leaves, much branched panicle, 4 to 6 feet.
Y. flaccida, foliage in close rosettes of leaves, these often fringed with filaments, 3 to 4 feet.
Y. gloriosa, leaves numerous, stiff, and pointed, panicles of large almost white flowers, 6 to 8 feet.
Y. g. variegata, handsome variegated leaves.
Y. pendula (recurva), leaves at first erect and of a sea-green, afterwards becoming reflexed and deep green, very graceful, 6 feet.
Y. pendula variegata, very fine.

G. ABBEY



GROUND PLAN OF WATER LILY POND AND SURROUNDINGS. (Scale, 1 inch = 24 feet.)

A. Pond; a, pigeon-hole rockwork pockets, central for Weeping Willow, the others for Water Lilies; b, Water Lilies. (See Sections.)
 B. Streamlet; c, rock. C. Wet places (see sections). D. Grass. E. Walks. F. Hollows, or damp situations. G. Hills, or relatively dry positions.



The Japanese Chrysanthemum.

MR. J. HEATON, gardener to R. P. Houston, Esq., The Lawn, Aigburth, the record Chrysanthemum grower of the district, lectured on Saturday evening, January 5th, at the Liverpool Horticultural Association on "The Japanese Chrysanthemum." The following is an interesting summary of his address. He preferred cuttings from plants grown for the purpose, the old stocks being cut down to 7 or 8 inches and placed in a good position previous to outtings being taken. The time for late varieties was early in November, while for early varieties the beginning to end of January was soon enough. The compost should be of two parts loam and one part leaf mould and silver sand, using $3\frac{1}{2}$ pots. Place them in a cool frame, protecting them from frost and excessive moisture. When rooted, pot them singly and place them on a greenhouse shelf, using more loam and some bones in the compost. At the end of February place them in cold frames, keeping them somewhat close for a few days, and protecting them from frosty nights. Towards the end of March shift them into 6-inch pots, giving a drainage of 2 inches deep, which will allow the plants to fit easily in the final potting when the drainage is removed, and leave ample room for a top-dressing later. The compost should be four parts loam, one part each decayed manure and leaf mould, and quarter part each bones, oystershells, charcoal, and sand. Pot firmly, except perhaps in the case of incurved Japanese, and use care in watering. The second week in May should see them ready for removal into $9\frac{1}{2}$ pots. Stake them, being careful not to tie too tightly, and fasten to two strained wires running east and west, and syringe them three times a day until the end of July. In feeding, employ soot water with a little lime added to clear it, this, of course, being given after the roots are found running into the top-dressing. Now follow up with supplies of sheep, cow, and horse manure, and a little artificial, but always in weak doses; and in case of mildew use carbolic softsoap. Start housing of plants the 23rd to the 29th September, leaving all ventilators and windows open night and day for a time, and fumigate before the blooms are open. Shade with tiffany when the blooms are half open, and maintain a light buoyant atmosphere, keeping the house at about 50° or 55° .—R. P. R.

Mutual Friend.

I BELIEVE this variety will become one of the best white Chrysanthemums grown for Christmas and the New Year. At the present time it is one of the most useful whites we have for cutting, being superior in this respect to Niveus. It is more graceful for table and vases than L. Canning. The flowers are produced in sprays, which are of the purest white.—J. B.

A Cure for the Rust.

ABOUT four years ago I had a plant of Georgina Pitcher added to my collection of Chrysanthemums, and it proved the means of introducing the rust. We tried the softsoap and petroleum mixture mentioned by some correspondents of the Journal, but that did not effect a clearance, and for a time we let the rust take its course. After flowering all the old foliage and stems were cleared away and burnt, but subsequently a few spots made their appearance on some of the cuttings. These having made good roots were placed into 60-pots; I then noticed that the dreaded rust was spreading freely. Some little time previously I had seen Veltha advertised in the Journal as a cure, and I determined to give it a good trial, but I could not see how to distribute it properly, as the stock was in such small pots. However, I mixed one part of Veltha to about 120 to 130 parts of water. The plants were dipped and laid down in the shade until dry, when they were taken back to their old quarters. From that time I never saw the slightest trace of the rust on those plants.

I daresay there are many persons who are well acquainted with the above, but the object of these notes is to assist those who do not know. I remember last spring paying a visit to a gardening friend who was troubled with the pest. He had previously tried Veltha by applying it to the roots of his plants, but he did not appear to have a very high opinion of it. If any of your readers have done the same thing, and not tried it in the manner I have described, I would say—Give it a thorough trial, and I think they will come to the same conclusion as myself, namely, that it is one of the most useful preparations that has been placed upon the horticultural market for many years.—H.

Winter Digging.

IF the value of digging were more fully realised there would not be so much ground lying in a beaten and soddened condition all the winter as one often sees. The turning over of the top spit as often as the crop on the ground will permit of it is very valuable, but digging two spits deep is far more so. Two-spit digging without any manure will give finer results than surface digging in conjunction with a fair dressing of manure. All who go in for deep cultivation do not win prizes for vegetables at the shows; but one thing may be taken for granted, and that is that those who win the prizes go in for deep cultivation. What is good for vegetables is, of course, good for flowers and fruit, but in the case of the latter the trenching must be done before the fruit trees are put in. I have seen jobbing gardeners turning over the top spit by putting the spade into the ground three parts of the blade only, and at an angle of 45° , and have felt inclined to tell them they were dishonest men.

Let us look at a few of the advantages of keeping the ground dug both deeply and often. The first thing to be realised is that the soil is inhabited by myriads of organisms, mostly minute forms of low vegetable life (bacteria), upon the existence of which in a healthy state of activity depends the fertility of the soil. Seeing, then, that the soil is alive, it must be treated accordingly so that life may go on. These organisms need oxygen, and if the ground is in a soddened condition they cannot get it from the air, and have to get it from the nitrates in the soil, resulting in the escape of free nitrogen in the air, and the much diminished activity of the organisms. Some of these organisms bring about the decay of dead animal and vegetable matter, which is broken down into ammonia, carbonic acid gas, and salts; while others do a no less important work in converting the ammonia into nitrates, in which latter form only can nitrogen be used by plants. It is only through these complicated changes that organic matter becomes food for plants; therefore, when bad soil conditions prevent them taking place the fertility of the soil is lessened, or rather, perhaps, the availability of its plant food is delayed. If the soil is so close that the carbonic acid gas (CO_2) resulting from the decomposition of organic matter cannot escape into the air, the soil becomes sour, which is another cause that prevents the organisms doing their work.

But there are other considerations of a different nature which are not less important. If the ground is left rough all the winter, the frost disintegrates the soil so that the air can circulate freely amongst the particles, and the roots of plants can work about amongst them, giving a greater feeding surface and increasing the vigour of the plant. This is very important. Most of the phosphates in the soil are in a very insoluble condition, and are only slowly dissolved by the acids of the rain water and the root sap. When the soil is thoroughly disintegrated by the frost the root hairs on the rootlets are able to grasp minute particles of phosphate and literally devour them by the action of their acid. If any reader has no idea how the roots ramify in thoroughly pulverised soil, let him take up a small plant growing in such soil and carefully wash the earth from the roots, when he will be amazed at the myriads of rootlets and the still greater myriads of root hairs upon them.

Moreover, the soil being rough the water runs through it more easily, so that the soil is drier, with the result that the sun in the early spring warms the soil much more quickly, as it is the water in the soil which absorbs so much heat in getting warm, and a still greater quantity is being evaporated, as anyone will understand who reflects upon the length of time a kettle of water has to be exposed to the fire before all the water boils away or becomes evaporated. If on a sunny day in February the hand is placed on soil that lies rough, and then on that which is soddened, both, of course, being alike exposed to the sunshine, it will be noticed that the former is warm and the latter cold. This roughness of the soil not only makes vegetation earlier, and harder and stronger, but enables the nitrifying organisms to do their work actively, which they can only do very slowly in a cold wet soil. Every degree increase in temperature from freezing point to 95° F. increases the activity of these organisms, and consequently the production of nitrates in the soil.

The above remarks apply principally to digging as such, without distinction between deep digging and surface digging. The advantages of the former are the same as the latter, but intensified. It not only gives the roots such a much greater depth for their ramifications, and consequently an increased area for collecting their food supply, but there is another very important benefit; and that is, in a dry summer the plants are able to stand much more drought without suffering. I never saw this more strikingly exemplified than during the dry hot month of last July, when most people's Peas being burned up by the latter part of the month, some that had been sown on deeply trenched ground were green and flourishing throughout the month.—ALGER PETTS

NOTES & NOTICES

Recent Weather in London.—We have had several changes in the weather during the past few days. On Saturday a heavy fog hung over the southern suburbs, but Sunday was clear and cool. Monday opened with a sharp, white frost; the later hours of the day were exceptionally fine, the sun shining with brilliancy and power. Tuesday again was frosty, but there were indications of a change on Wednesday.

The Turnford Hall Institute.—The third annual dinner of the Turnford Hall Nurseries Working Men's Institute was held on January 5th, Mr. Thomas Rochford occupying the chair. There was no official toast list, but one or two speeches were delivered, though the vocalists and instrumentalists monopolised most of the time. Mr. H. B. May proposed the health of the chairman; and Mr. Rochford responded. Membership is not now confined to the Turnford Hall Nurseries.

Death of Mrs. George Gordon.—It is with the deepest regret that we have to record the death of Mrs. George Gordon, the wife of the respected editor of the "Gardeners' Magazine." The end came, after many years of suffering, during the early hours of Friday morning, and it was peaceful. The sympathy of the entire world of gardening will be extended to Mr. Gordon in his great trouble, which is rendered much harder to bear by the fact that only a short time ago his eldest son was laid to rest. The interment was in Richmond Cemetery on Monday afternoon, only the relatives and a few personal friends being present.

Reading and District Gardeners' Mutual Improvement Association.—This very flourishing society, under the presidency of Mr. Leonard Sutton, with a roll of some 150 members, has issued its annual report and its programme for the present year. The entertainments are held at the Club Room, Old Abbey Restaurant, King's Road. There, on next Monday, will be held the annual soirée. Mr. George Gordon is advertised to lecture about "Garden Roses" on the 28th inst., and later, on March 11th, "The Old and New Methods of Peach and Nectarine Culture" will be treated of by Mr. Iggulden. In securing the Rev. G. H. Englehart to speak regarding "The Narcissus" on March 26th the society has luckily bespoken a popular expert for a very interesting subject. The session will close upon April 22nd.

Kew Gardens and Photographing on Bank Holiday.—Mr. F. G. Heath writes to the "Times" from Underwood, Kew:—"On Boxing Day, the weather being particularly fine and suitable for my purpose, I sought admission to Kew Gardens at 11 A.M. with a small hand camera in order to take some photographs of botanical subjects for illustrations to a new book I am preparing for publication. I was refused permission to take in my camera, although I showed my special student card. The regulations which I received with my card state, 'Persons holding cards may draw, sketch, or photograph in the open air during such hours as the gardens are open to the public.' The gatekeepers, however, told me that their verbal instructions, not contained in the printed and published regulations, are not to admit anyone with a camera on any Bank Holiday. I pointed out that the regulations exhibited at the gates were distinctly against these verbal instructions. But they were resolute in their refusal to admit me, and referred me to the office, which they said was open, at Kew Green. I went to the office and found it was closed. I then called on the very courteous curator, Mr. Nicholson, who happened to be at home. But he was equally resolute, and courteously declined to give me special permission to take in my camera. He said cameras were considered 'rather vulgar.' I replied that I thought even if the public did want to take in cameras for photographs of plants it was a perfectly innocent object, and much better than getting intoxicated at wayside public-houses on a Bank Holiday. However, I did not succeed with the curator, and I trust, sir, you will allow me, through the widely read columns of the 'Times,' to protest against such a wholly unnecessary and unreasonable want of official direction. A Bank Holiday is often the only time that a busy man can spare for the pursuit of a study that is intended for the benefit of others."

Death of Mr. Sydney Cooke.—We regret to learn of the death, on the 1st inst., of Mr. Sydney Cooke, who was for some years gardener to De Barri Crawshay, Esq., Rosefield, Sevenoaks. The deceased was amongst the best growers of *Odontoglossums*, and enjoyed the esteem and respect of his employer.

Heaton Park for Manchester.—After an agitation of several years Manchester is within measurable distance of securing to the public the only large park remaining in its immediate neighbourhood. On Saturday afternoon the Parks Committee reported that negotiations had been opened with Earl Wilton's representatives for the purchase of Heaton Park, which lies three miles from the centre of the city, at its northern extremity. It is 650 acres in extent, and consists almost wholly of woodland and greensward. Cricket, football, and lacrosse clubs are in great and increasing need of the accommodation it would provide. The purchase price will be about a quarter of a million.

Horticulture in the Isle of Wight During the Past Seven Years.—In connection with the County Technical Instruction Committee over 800 lectures have been given, and a county experimental garden has been established. Here trials of varieties of produce and methods of manuring will be made, and practical demonstrations in the various gardening operations will be given from time to time. The Isle of Wight Horticultural Improvement Association and the East and West Cowes Horticultural Improvement Societies have been established, and have now a total membership of over 600, and it is noteworthy that while in 1893 there were ten flower shows in the Island, last year there were twenty. There has been a great increase in the number of allotments and market gardens, also in the number of cottagers' and amateurs' greenhouses. School gardens have been established by Mr. T. G. Rooper, M.A., the highly respected inspector of day schools, and many new varieties of fruits, flowers, and vegetables have been raised by Island gardeners.—S. H.

Birmingham Gardeners' Association.—On the 14th inst. the presentation of the annual report and balance-sheet and election of committee and officers for 1901 took place at the Athletic Institute, Mr. W. B. Latham in the chair. The balance-sheet showed a slight balance in favour of the society, and it was stated that there had been an increased accession of members during the past year. Mr. F. Dedicott, gardener to A. H. Wiggin, Esq., Griffin Hill House, Selby Oak, received a certificate of merit for *Cyclamens*, and Mr. G. Stacey of Harborne was also awarded a certificate for a collection of handsome Potatoes, well kept Apples, and Standard Bearer Celery. Mr. Herbert Stone's (Birmingham) offer of a patent garden syringe as a prize for a collection of salading grown under glass was accepted. Mr. W. Eades, gardener to the Right Hon. William Kenrick, The Grove, Harborne, exhibited specimens of very fine and highly coloured *Sturmer Pippin* from a young standard grown in an exposed orchard under glass, was recommended as worthy of affording a successor to the *Ribston Pippin*.

United Horticultural Benefit and Provident Society.—The monthly committee meeting of the above society was held at the Caledonian Hotel, Adelphi Terrace, Strand, W.C., on Monday evening last, Mr. C. H. Curtis in the chair. Respecting the secretary's salary, it was proposed by Mr. Winter, and seconded by Mr. Hudson (as a recommendation to the general meeting which was about to take place), that £70 for 1900 be paid, with an annual increment of £5 until £100 is reached. This was carried by the majority. Nine new members were fully elected, and three others subject to the production of birth certificates. Six others were nominated. Mr. G. Mouland, having received twelve months' sick pay, was granted half-pay for a few weeks until he reaches seventy years of age. A member was granted six months' subscriptions to tide him over a difficulty. The actuary's report was produced, and ordered to be read at the next meeting. A cheque for £12 12s. was passed for the actuary's services. The secretary was instructed to pay Messrs. Polletts' account, and a cordial vote of thanks to the chairman ended the meeting. A special general meeting was also held for the purpose of taking into consideration the recommendation of the committee that the secretary's salary be adequately increased. W. Roupell, Esq., presided. After a few appropriate remarks from the chairman, it was decided that the secretary's salary be £70 for the year ending January 14th, 1901, with an annual increment of £5 till the maximum of £100 be reached, the said salary to be paid quarterly.

Gardeners' Royal Benevolent Institution.—A committee meeting of this society will be held at 175, Victoria Street, S.W., on Friday next, the 18th, at half-past five in the afternoon, when the fixing of the date of the next festival dinner and other matters will be considered.

The Edinburgh Market Gardeners.—It is reported that at a recent meeting the Edinburgh market gardeners decided to bring their practice in selling into a line with that which obtains in other markets. Hitherto they have counted fourteen to the dozen, but at the meeting in question it was decided to sell only by the even dozen. This sounds sensible, and cannot be other than beneficial to all parties.

Brighton and Sussex Horticultural Society.—In submitting the balance-sheet for the past year, the committee regretted to report a serious decrease in the subscribers and hon. members' subscriptions. The receipts for the spring show were, however, much better than usual; the expenditure generally was less, and the committee were able to present a balance-sheet showing a profit on the year's working of £13 10s. 1d., and a balance in the hands of their bankers of £122 19s. 2d. The thanks of the society were given to the president (G. W. Willett, Esq.) for his generosity in defraying the cost of the judges' and committee's luncheon at the Chrysanthemum Show; and it was decided that the spring show, originally fixed for March 26th and 27th next, should be postponed to April 16th and 17th of this year.

Bristol Gardeners Association.—The usual fortnightly meeting of this society was held at St. John's Parish Room, Redland, on Thursday, the 10th inst., Mr. G. Brook presiding. The subject for the evening was, "Six Good Vegetables and Their Cultivation," opened by Mr. W. J. Hockey, of Yatton. The vegetables under consideration were Beans, Cauliflower, Celery, Onions, Peas and Potatoes, the subject being dealt with in the able manner to be expected from such an expert as the lecturer. He gave clear directions as to preparation of ground, times of sowing seed, method of planting, and after treatment in each case, urging the frequent use of the hoe amongst the crops, and careful attention to insect pests. Mr. Hockey also advised the judicious use of chemical manures in the culture of nearly all vegetables, giving details as to kinds and quantities. A short but interesting discussion followed the lecture, and the lecturer was cordially thanked for his attendance. Prizes for six crowns of Seakale were awarded Messrs. Binfield, Gardner, and Shaddick. Certificates of merit went to Mr. Frampton for a *Cymbidium giganteum*, and Mr. A. Murrell for an exhibit of *Cypripedium Leeanum* blooms.

Grand Yorkshire Gala.—The annual meeting of the guarantors and life members of the Grand Yorkshire Gala was held in Harker's Hotel. Alderman Border presided over a large attendance. The chairman said that they were met together to inaugurate the gala for the ensuing year on June 12th, 13th, and 14th. Personally he knew of nothing this year which was at all likely to detract from the influence of the gala like that which was unfortunately the case last year. The Royal Agricultural Show was held immediately after the gala. They never had a better display of fruit, flowers, and horticultural products than last year, but circumstances were against them, and they left off with a deficit. He felt that it was the wish of all that the first gala of the present century should be an unqualified success, and he was sure that all present would do their utmost to maintain its prestige and help to continue the good work which the society had done in York for forty-three years. He proposed that the Lord Mayor (Alderman E. W. Purnell) be elected president for the ensuing year. Mr. J. J. Hunt seconded the proposition, which was unanimously carried. The chairman moved that Sir Christopher Milward be re-elected chairman, which was seconded by Mr. M. Cooper, and carried. On the motion of Alderman Foster, seconded by Councillor A. Jones, Alderman Border was unanimously re-elected vice-chairman. Mr. Potter-Kirby moved, and Councillor A. Jones seconded, the re-election of Alderman Sir J. Sykes Rymer as treasurer, which was agreed to. Alderman McKay, in complimentary terms, proposed the re-election of Mr. C. W. Simmons as secretary, which was seconded by Mr. J. W. Craven, and carried by acclamation. Messrs. Pearson and Taylor were re-elected auditors. The council was unanimously re-elected, with the addition of Mr. E. Bushell. The following sums were allocated for the forthcoming gala:—£650 for the floral fête, £230 for the musical arrangements, £120 for fireworks, £65 for balloon expenses, and £175 for amusements. The various committees were then appointed.

"The Orchid Review."—We are informed that after January 1st, 1901, the price for the monthly issue of "The Orchid Review" will be reduced from 1s. to 6d. This publication is recognised as one of the best authorities on Orchids, and the reduction in price should extend its popularity, and thus enhance its utility.

Hessle Gardeners' Mutual Improvement Society.—At the fortnightly meeting of the above society, held at the Parish Schoolroom, January 7th, 1901, there was a record attendance, over which Mr. Leadbetter, Tranby Croft, presided. A lecture on chemical manures and their use in connection with different soils was very ably given by Mr. Dobbs of Elloughton, whereupon a good discussion followed. The society has been fortunate enough to secure the services of Mr. Gant, lecturer to the Yorkshire County College, Leeds, who will deliver a course of four lectures on horticulture on the following dates:—January 15th, 22nd, 29th, and February 5th.—J. F. D., *Yorks.*

The London Parks.—In the course of a lecture on Saturday evening on "The Work of the London County Council," Mr. Sydney Webb, L.C.C., made the following reference to the parks and open spaces of the metropolis:—Twelve years ago there were only twenty-seven open spaces in London for recreation. Now there were about 200. Wherever possible the London County Council had snatched little oases of green from the tide of bricks and mortar. Out of London's twenty square miles something like nine square miles were made up of parks and open spaces, managed partly by the Government and mainly by the Council. A remarkable change had come over the administration of the parks in the past twelve years. The supply of refreshments and the provision of music had been regulated. When there was ice a staff of men was kept to sweep the ice and preserve order, so that what was once pandemonium was now enjoyment for all. It was not generally known, perhaps, that any body of youths could, for the asking, have a special piece of ground reserved for their use to play cricket on on any day in one of the parks. In this way they tried to make the parks of London as valuable to the poor boys as a private ground was to a wealthy club. The improvement and extension of London's open spaces had only cost ½d. in the pound on the rates. It was reckoned that the ratepayers of London paid 4d. a year per head for playgrounds for their children, for free music, and for a piece of ground where quiet could be enjoyed.

Summary of Meteorological Observations taken at Belvoir Castle in 1900.—The prevailing direction of the wind was westerly on a total of 110 days. The total rainfall was 27.11 inches; this fell on 210 days, and is 0.25 inch above the average for the year; the greatest daily fall was 2.20 inches on December 30th. Barometer (corrected and reduced): highest reading 30.665 inches on March 13th at 9 P.M.; lowest reading 28.460 inches on February 19th at 9 P.M. Thermometer: highest in the shade 87° on July 19th; lowest 10° on February 8th. Mean of daily maxima 55.46°; mean of daily minima 40.97°; mean temperature of the year 48.21°; lowest on the grass 8° on February 8th, 12th, and 13th; highest in the sun 138° on June 11th; mean temperature of the earth at 3 feet 48.27°. Total sunshine 1497 hours 55 minutes, which is 3 hours 18 minutes below the average for the year; there were sixty-six sunless days.—W. H. DIVERS.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
January.										
Sunday .. 6	E.N.E.	deg. 31.0	deg. 29.8	deg. 31.5	deg. 27.2	ins. 0.07	deg. 38.9	deg. 43.8	deg. 47.5	deg. 24.5
Monday.. 7	E.N.E.	29.7	29.0	30.5	27.5	0.07	37.7	43.0	47.4	26.3
Tuesday 8	E.S.E.	30.0	29.2	35.0	26.5	0.12	37.3	42.5	46.9	21.1
Wed'sday 9	E.N.E.	31.2	30.0	43.0	27.4	—	37.3	42.0	46.7	24.7
Thursday 10	E.S.E.	39.2	38.7	50.3	31.2	—	38.1	41.8	46.5	28.1
Friday .. 11	E.S.E.	41.4	40.6	46.3	39.5	0.07	39.1	42.0	46.2	29.2
Saturday 12	E.N.E.	38.4	38.1	43.1	38.1	—	40.6	42.3	46.2	36.2
MEANS ..		34.4	33.6	40.0	31.1	Total 0.33	38.4	42.5	46.8	27.2

Snow fell during the first part of the week to the depth of 2½ inches, which soon disappeared as the weather became milder. The latter part of the week was remarkable for black smoky fog.



Revival of the Camellia.

A FEW decades ago the Camellia was more in demand than since, probably owing to the wonderful advance of the Chrysanthemum and of forced flowers, such as Bouvardias, Lilies of the Valley, Roman Hyacinths, Narcissi, and other easily forced flowers, and which, perhaps, more readily lend themselves to elegant and dainty "buttonholes" than the "humpy" Camellia—as it has irreverently been designated—beautiful though they be, and prized by many wearers yet. It would appear, however, that there need be no fear of the Camellia becoming entirely excommunicated from public favour when, if for instance, it is taken into consideration that at a sale at Birmingham last year, several boxes of blooms fetched from 10s. to 12s. per dozen blooms, an extraordinary price, and Mr. Pope informed the writer that never since the celebration in Birmingham of the coming of age of the Prince of Wales had he known Camellia flowers fetch so high a price as that quoted, and when upon that auspicious event single blooms of Camellias were sold from one shilling to half a crown each.—W. G.

Old Hotbed Manure.

So there is no "virtue" in old hotbed manure. I hope "Nous Verrons" does not mean to assert that it has parted with all its plant food. If he does, then he startles us all. Well may he exclaim, What next! again, when I assert that there is great plant food in an old hotbed, and that in its well-decomposed and far from exhausted condition, it presents plant food in the most facile form. Does not all experience prove so much? What gardener does not gladly use it whenever he can? Who in making up a pet plant compost does not use it when obtainable? And why? Because if it has parted with some of its ammonia it still retains other, and for plant production, more useful constituents, than nitrogen. Whenever nitrogen is required, and often far too much of it is used for Chrysanthemums, it can easily be given in liquid form. Then old hotbed manure does not waste and leave pot soil hollow in the same way that fresh and crude manure does. Why do the growers of giant Onions employ old hotbed or Mushroom bed refuse as top-dressing but because of its fertile value? Why do we use it for any and every purpose whenever obtainable? Scores of years of experience has shown that as a food for any crop old hotbed manure is rich in food. That, "Nous Verrons," was known before you were born.—A. D.

Strawberries.

I HAVE perhaps had as much experience with St. Joseph and Oregon Strawberries as anyone in England, and it pained me to read that "Wanderer" so severely questioned the merits of these two most invaluable kinds. I herewith send you two plants at this date, January 9th, and as you will observe, Mr. Editor, they are throwing up strong trusses of flowers, and will with any ordinary care bring forth fruit, and it is perfectly correct these two varieties continue doing so from the end of May till the new year, thus for a space of seven months will keep us supplied with luscious fruit, and of a fair size and flavour; a fruit so essential to allay certain complaints and refresh our system. It certainly is not very encouraging to the hybridists who devote so many hard, attentive hours trying to raise and introduce something entirely new, when enthusiastic and grateful amateurs announce their thanks, and in praise of such work to be attacked by those who are perhaps difficult to please, or failed to foresee what may yet come from this particular fruit. I am of the opinion that they are rather unkind to these national improvers. When we adopt the correct method, and bring their fruit to perfection during the latter end of the summer and all through the autumn, meeting the ordinary kinds in early fruiting, surely the public will give us credit for making two fruits grow where only one grew before. As regard to their fruiting propensities, how totally different that to the ordinary kinds. What the opponents to these new comers should do, in my opinion, is to give us a similar variety with longer and stronger fruitstalks, and perhaps it would not be asking for more than they can oblige us with, possessing the size, and the beautiful flavour of British Queen. This done, I would strongly advocate, whoever it might be, that they should be publicly recognised and presented with a purse of money by the nation.—R. CANNELL, *Eynsford*.

[The plants sent were grown out of doors and had visibly developed fruits, sometimes reaching the size of a pea, and abundance of flowers.—Ed.]

Women as Gardeners.

What They Can Do.

It seems to me now that women are training themselves to perform certain important work in the garden that they should be encouraged to do so, but it is folly on the part of anyone to suggest heavy work for them which is best carried out by men. In every large garden there are numerous light employments which women could deal with satisfactorily. We do not want to see them bending double at digging, forking, wheeling, or mowing, but they would be a great help to busy gardeners in spring or summer, and at other seasons too, under glass or outside. Capable women would soon learn, if they had not already learnt, how to pot young Chrysanthemum plants, Tomatoes, and seedlings of various descriptions. The work of propagation in a garden is considerable, and much of it could readily be entrusted to women. Sowing seeds in pans, pots, and light boxes, pricking out seedlings and attending to them, tying and training plants might all be done by them. Women, too, might assist in thinning Grapes, taking the lower parts of the roof while a man dealt with the high and inconvenient parts. The tying down and stopping of Vine shoots, disbudding Peaches and Nectarines, and thinning the fruit is light work, but tedious and important, some of which girls or women with an aptitude for the work could manage satisfactorily. The watering and management of house plants are peculiarly suitable for women, provided they have had experience in the work. The average housemaid knows nothing, and cares less, about the welfare of any plants in her domain, but the trusty lady assistant would alter all that. A conservatory, too, might be under her charge so far as watering, air-giving, and the general cleanliness, as well as tasteful arrangement of the plants were concerned. Few general gardeners have sufficient time, with their multifarious duties, to give new arrangements to conservatory plants as often as may be desirable. Female help of the right kind would be invaluable. Then there are other jobs such as gathering bush fruit, summer pruning bushes, wall trees, planting, tying and staking border plants, summer and autumn attention to Chrysanthemums, also flower beds, cutting flowers, and many other matters. In fact, without resorting to heavy work sufficient employment may be found in any large garden for an industrious woman.—E. D. S.

Jerusalem Artichokes.

A Remonstrance.

As soon as we have got the leaves cleaned up from lawns, shrubberies, drives, and walks, which usually takes us, even if the weather is good and open, until about Christmas, we get at our Jerusalem Artichokes, lift them, sort them, store away with other root crops the useable ones, select the seed, dig the ground, and plant again, and on the same ground that has carried the crop, and good ones too, for over twenty years now, then wheel the refuse roots down to the farm for the pigs. We had just finished planting, and glad to get that job done, and were rejoicing with thanksgiving on having a full store of roots for household use, which are used largely, both as a second vegetable, but especially in soup, when our Journal, January 6th, came and dashed the cup of rejoicing from our lips, for there stared us in the face on page 10 in "Notes and Notices" the baneful paragraph, "Poison in Artichokes." "Bless me," I said, "what next?" What with one thing and another, Mr. Editor, we shall soon not be able to eat or drink anything with safety except bread and water, and perhaps "taties."

These provoking scientific people are for ever finding out that this poison, or that fungus or bacillus is in some of the food and drink we have used for years and years, and which we always considered to be healthy and sustaining commodities; arsenical poisoning by drinking beer, which is made in these days from glucose (prepared by sulphuric acid) instead of malt and hops, though this latter has no terrors for a few of us on the *Journal of Horticulture*, understand, and now poison in our old and useful friend, the innocent (with a joint of roast beef or mutton and plenty of gravy) Artichoke. I may indeed say with amazement, "What next?" Why, life will hardly be worth living soon, and I venture to remonstrate, and that very seriously, with the editor for introducing this unpleasant paragraph, and especially so at this festive season. But, ha! ha! perhaps it was that naughty sub-editor or the P. D., who had been Christmasing too freely, Eh! Oh, fie! to frighten us like this.

It occurs to me here to look a little closer at the obnoxious note, and read it again. "German scientists have found that a poisonous bacillus vegetates on the Artichoke." "German scientists!" "Oh, that'll do," I said. "That eases my mind!" Of course these fellows can find out anything they want to, but they don't take in us Britons. No, no! We are a step above that, and we shall go on enjoying our Artichokes with our roast beef or mutton without the least fear. All the same, I think my remonstrance may stand, if only that we may comfort ourselves by our discovery of the origin of the paragraph, and know that those jovial fellows, the "Sub" or "P. D.," will get a very severe talking to. To show that I am from the country, I think I had better sign myself—AN OLD PROVINCIAL.

Certificated Plants.—No. 4.

THE genus *Caladium* shows a remarkable muster-roll of varieties in the R.H.S. list of certificated plants. As I write there lies before me a list of hothouse plants, published in 1817, in all probability one of the most comprehensive and reliable published during the first quarter of the nineteenth century; in that there is no mention of *Caladium bicolor*, which was introduced by Messrs. Lee & Kennedy as far back as 1773. The first *Caladium* certificated by the Society was *C. Chantini*, introduced from Para, and exhibited by Messrs. Veitch & Sons in 1859, a year after its introduction; the next year Messrs. Osborn & Sons received the same award for *C. Wightii*. Some three or four others were similarly honoured during the sixties, such as *Alfred Bleu*, *Auguste Riviere*, *Meyerbeer*, and *Queen Victoria* among others. One of the most useful is undoubtedly the dwarf growing, small leaved *C. argyrites*, which, though introduced in 1858, did not receive a certificate of merit until 1884. Of late years numbers of new varieties have come over from the Continent, and some probably raised in this country. What splendid specimens are produced in a high and moist atmosphere can be seen at the Temple Show, and for the decoration of a warm greenhouse and stove, no other plants of a similar character show so many and such exquisite lines of beauty traced upon their leaves, rivalling in richness of tone the flowers of other plants.

The Chinese Aster.

The Chinese Aster (*Callistephus*) must have been in cultivation in this country for many years before any serious attempt was made to improve it. In the early part of the nineteenth century there were in cultivation some eight forms of the China Aster, and a half dozen or so of the quilled. There can be no doubt that the many distinct, well-defined types in cultivation, such as the crown flowered, the quilled, the incurved, the *Chrysanthemum* flowered, and the Comet, are all traceable to a common parent but modified by selection and cultivation. We have many instances on record showing what human agency can accomplish in the direction of leading on a novel peculiarity until it becomes fixed and the first of a new type. James Betteridge of Chipping Norton did much to improve the quilled type, which in the hands of later devotees has been further advanced in quality.

We may take the present quilled Aster, which is exhibited in such finished beauty at flower shows held in the West of England in August, as a distinctly English creation; but the fine flat petalled types—the *Victoria*, *Pæony*-flowered, and the Comet—we owe to continental enterprise. It does indeed seem doubtful if improvements in these sections can be carried further, though each succeeding year witnesses the introduction of so-called novelties in Asters from the Continent; and as if in protest against the much and deservedly lauded double forms, the single type, glorified by selection and cultivation, is asserting itself and challenging comparison with its double relatives, and this phenomenon is also seen in the case of other flowers in the present day.

The perennial Asters have multiplied during the last few years with amazing rapidity, and they can now be had in all heights of growth, in great variation as to colour and in the size of the blooms. Their value as autumn flowering plants cannot be over-estimated. Nearly fifty forms were in cultivation in the beginning of the century, largely natives of North America, and in the main it is supposed they were natural seminal varieties.

The Calceolaria.

Coming to the *Calceolaria*, this popular flower is distinctly a product of the last half of the nineteenth century. During the first quarter of the century the only species known was *C. Fothergilli*, introduced from the Falkland Islands in 1777. It was not until the end of the thirties that any attempt to systematically improve the *Calceolaria* was made, and by 1848 such leading florists as Cole, Gaines, Kinghorn, Woodhouse, Holmes, and Constantine, were raising seedlings in every direction, for it was a time when there was a great revival of interest in florists' flowers generally. An enormous impetus was given to the culture of the *Calceolaria* when in 1855, Mr. J. Cole, a nurseryman at St. Albans, raised a batch of shrubby varieties, probably through crossing the hardy *C. scabiosæfolia* and others on to the somewhat tall-growing softwooded types then cultivated. Cole's new varieties were of dwarf, compact habits, the flowers smaller, but much more freely produced than in the case of the types then being cultivated by Kinghorn and others. Mr. J. James, then gardener at Redlees, Isleworth, crossed the shrubby and the taller types, and in this way began the section of much dwarfer varieties now so popular; indeed, and that not without reason, it is sometimes asserted that the extreme limit of dwarfness has been reached, with a corresponding loss of decorative effect. Large size in the flowers has been gained, but too much at the expense of form; but with size has come what is not usual, a marvellous floriferousness. Messrs. Sutton & Sons, Carter and Co., Webb & Sons, and others, have now in cultivation strains

beyond which, in point of size, it seems unwise to go. *C. amplexicaulis*, introduced from Peru in 1845, still maintains its individuality, and has never ceased to be a favourite bedding plant for summer. It may be added that the naming of distinct varieties of *Calceolarias* ceased long ago.

The Camellia.

The *Camellia*, once the fashionable buttonhole flower, has been dethroned by the Carnation and the Rose. There was a time when this plant was to be found in every garden as indispensable to a representative collection. As a conservatory subject, whether planted out or cultivated in pots, the *Camellia* may be said to be without a rival. But it is not popular to-day, though occasionally a variety receives an award from the Royal Horticultural Society. As far back as 1862 a certificate of merit was awarded to *Contessa Lavinia Maggi*, and in the same decade a few others were similarly honoured, including the double form of the well-known *C. reticulata*, which was exhibited by the late Mr. John Standish. One of the most valuable introductions during the last half of the century was the American *C. M. Hovey* in 1879, a model flower in point of form, as well as brilliant in colour. Year after year Messrs. W. Paul & Son of Waltham Cross bring to London collections of plants and cut blooms remarkable for their high culture and fine development of flower, and an award of merit is occasionally made to a new variety. Fine examples of *C. reticulata* are occasionally met with in conservatories, and few possess greater ornamental value.

The Canna.

Canna glauca and *C. indica*—the latter having been introduced from the West Indies in 1570—found a place among reedy or Scitamenous hothouse plants early in the century just closed. There had been a few introductions up to 1866, but it was not until Mr. Alex. Rogers in that year employed them in his illustrations of subtropical gardening in Battersea Park that any degree of interest was manifested in securing improvements upon those already in English gardens. The novelty and beauty of these beds was lauded; those interested in outdoor summer gardening came to see, and their imaginations were fired by the bold and striking leafage the plants displayed. The original Cannas were mainly of tall growth, but new productions were characterised by shorter habit. In 1880 Messrs. Hooper & Co. received a first-class certificate for the large and brilliant crimson *C. Ehemanni*, and from that time forward awards have been made with some degree of frequency. In late years we have witnessed the flowers increasing in size, substance, and marking, thanks to M. Crozy and others; dwarfness of habit is now a conspicuous feature, and for decorative purposes they are of the greatest value. During the past twenty years awards have been made to as many as fifty varieties of Cannas, and the work of improvement is by no means at an end.—R. DEAN.

Early Flowering Shrubs and Trees.

I MAY at once say that, as a rule, shrubs are seldom given a fair chance, being too often used as stop-gaps, or as nurses for evergreens and Conifers; they are mutilated rather than pruned; crushed, and crowded in such a manner as to prevent their assuming that elegant form which they should develop; used singly instead of in masses; and, in short, neglected in every possible way. Even in nurseries they are not seen in perfection, because for the purposes of sale it is necessary to cut them back severely in order to make all-round plants. Happily at Kew and some other botanical gardens they can be recognised in proper condition, and in such private gardens as Miss Willmot's at Warley Place, Miss Jekyll's at Munstead. I also call to mind their intelligent treatment at Madresfield Court, Great Malvern, where Mr. Crump seems to consider what may be called the feelings and wants of all subjects under his care in that vast and beautiful garden. Still, it is evident that in our provincial parks, cemeteries, &c., they are too often made to assume a set form, and clipped for the sake of tidiness more often than they are allowed to demonstrate their natural beauty and utility.

To the amateur cultivator one advantage they possess is cheapness, as for a £5 note he may buy 100 fine and distinct varieties, or fifty of the choicest for the same sum. Further, they require no special soil or position, except in a few cases, which will be noted hereafter; and for elegance, boldness, grace, and contrast with their evergreen brethren they stand out pointedly, as even without flower their foliage alone entitles many of them to a position of importance, ranging as it does from the mossy *Tamarisk* to *Paulownia*. Nor must their value as cut flowers be overlooked. They supply sprays of all sizes, suitable for large receptacles as well as for small table vases, and this cutting at the flowering season does the plant good, as will be seen by the notes on pruning. Several are very sweet scented, and many old favourites have a sentimental value from their frequent notice in poetry and prose, and from their returning to greet us, season after season, linking

themselves to our hearts by many a fond association, brightening our work and cheering our leisure hours.

December, January, and February.—In the uncertain weather which prevails in the above months it will be best for our purpose to take them together, as in a mild season shrubs which naturally blossom in the latter are often found in flower in the former month. We have *Garrya elliptica*, with its rich green foliage and long pendent

or *Chimonanthus fragrans*, from which the scent "Ylang Ylang" is formed. Though a dull orange-brown colour, their perfume is delicious; and when the flowers are plucked and placed in a bowl the warmth of the room brings out the scent. Unfortunately the growth does not allow of sprays being used. Its large Peach-like leaves are a fine contrast to other wall plants in summer. The ever welcome *Laurustinus*, both the species and the varieties "hirsutus" and



WATER LILIES. (See page 49.)

catkins; fine as a shrub, and in colder climates worthy of a wall. *Hammamelis arborea*, or Witch Hazel, with its curiously twisted orange flowers, is weird and conspicuous. The *Mezereums*, both red and white, are most effective when massed, and, like most of the *Daphnes*, eminent for perfume. The beautiful flowers of the new *Amygdalus* (or *Prunus*) *Davidiana* often open in mild weather. The white one is particularly fine, and its pale green foliage is striking in summer. On walls we get the spicy scented flowers of the *Calycanthus*

"*lucidus*," are grand in the shrubbery, while as a carpet plant few can equal the profuse flowering *Erica carnea* (or *herbacea*), which brightens our gardens in the dullest of months. The yellow *Jasminum nudiflorum* will often succeed as a shrub. It is also during the wintry weather that one appreciates the rich colour of the stems of the Red Dogwood (*Cornus alba*), which in masses is very conspicuous. The little known *Larix leptolepis* is also to be commended for its warm colouring when the tender green foliage is shed. *Cornus*

mascula variegata exhibits its yellow flowers in February, which, though small in themselves, are very abundant, and light up the shrubbery, while the silvery variegation comes in later in the year.

In March vegetation is very feeble as a rule, and we live, as it were, more on promise than on realisation and fulfilment. Possibly the only flowering trees are the Myrobalan Plums (*Prunus cerasifera*), of which we have the white flowered, producing both red and yellow fruits, and we welcome its snowy blossoms as a foretaste of spring. The Japanese kinds, as *P. Mume*, double and single red, have not yet shown to advantage. Trees are yet small, and the frosts being most severe next the soil, the precocious blossoms suffer, but in themselves they are very charming. Occasionally the Almonds will give a few blossoms. The Palm Willow (Plum-leaved) is well worth a position near water or in damp spots; its flowers at this time are most welcome, both cut and on the bushes. The Blackthorn of our hedges flowers with the Myrobalans, but April is the season of Nature's great awakening, and is generally ushered in by the Bitter and Sweet Almond in all their glory of pink and pale blush flowers. In sheltered spots the double Peaches (*Persica*) are conspicuous, but in Kent they are failures. Among the earliest and brightest shrubs are the Forsythias, of which *F. suspensa* or *Fortunei* is best treated as a climber or archway plant, when its bold-toothed deep primrose flowers appear to advantage. It is vigorous, and after flowering the old wood should be cut out and the new growth encouraged. *F. viridissima* is a somewhat ugly bush, but it redeems its character by a profusion of rich yellow flowers, and is an object of interest even at some distance, especially when backed by evergreens. *F. intermedia*, a hybrid between the two previous ones, is more graceful in growth.

The sub-shrub *Mahonia* (*Berberis*) *aquifolia* unfolds its yellow flowers early in the month, and is a conspicuous object. Perhaps some forms in which finer flowers are developed may soon be selected, and such will be welcome for their striking appearance, although the species, when given room, is most valuable. Nor must we forget the crop of rich violet berries it supplies in August and September. The double Gorse (*Ulex europæus*) is too much neglected. Its beauty in a mass has few equals, and its honey-like perfume is most delicious; we must also recollect it can be grown where many other things fail to find nourishment. *Spiræa Thunbergi*, with its multitude of minute white starry flowers, makes a great show, and followed by its pale green narrow foliage is grand for the front borders. *Rhododendron præcox* now claims attention; its soft lilac flowers resting on glossy green foliage render it very conspicuous. There is a variety called Early Gem also, and the allied but taller purple *R. dahuricum* is also very fine; both require peaty soil and some shelter from cold winds. *Prunus* (*Amygdalus*) *sinensis*, or Fortune's Double White Plum, is a neat dwarf grower, and the pink variety *P. s. rubra plena* are both most exquisite varieties, while a little later the *P. triloba* is seen. Its large double rose flowers are lovely, but owing to frosts it is more often seen as a forced conservatory plant. Perhaps of all our April shrubs *Magnolia stellata* (*Halleana*) is the finest, and very suitable for a warm corner where the cold winds cannot so readily mar its elegant bell-shaped flowers. The ever esteemed *Ribes* is now to the fore, and whether we take the old one (*sanguinea*) or any of the deep red varieties, they are charming. In the whites that called *albidum* is the best; and for pale rose, *R. carnea grandiflora*. *Genista præcox*, a pretty dwarf compact Broom with its creamy flowers, must not be forgotten. It is sometimes grafted on *Laburnum* stems, after the style of a standard Rose, and is most elegant in that form. Towards the end of April we get a galaxy of blossom in the different species of *Berberis*, *Mespilus*, *Malus*, *Cydonias*, *Cerasus*, *Cytisus*, *Magnolias*, and *Laburnums*.—MR. GEORGE BUNYARD (in the "Journal of the Royal Horticultural Society.")

Royal Horticultural Society.

Drill Hall, January 15th.

THE Drill Hall on Tuesday was very bare of exhibits, the floral section being exceptionally weak. Orchids were not particularly numerous, but of great interest.

Fruit Committee.

Present: G. Bunyard, Esq. (in the chair); with Messrs. G. Kelf, W. J. Simpson, W. Farr, J. W. Bates, S. Mortimer, A. Dean, C. Herrin, E. Shaw Blaker, W. Poupart, H. Markham, E. Beckett, G. T. Miles, G. Wythes, J. Willard, J. Cheal, G. Norman, A. H. Pearson, H. Esling, and the Rev. W. Wilks.

Messrs. Jas. Veitch & Sons, Ltd., staged seven varieties of Pears, all grown on pyramid trees in the open air. They were all clean, well-grown samples. Those most notable were Olivier des Serres, Bergamotte Esperen, Beurré Easter, Josephine de Malines, Nec Plus Meuris, and Beurré Rance. Mr. Dixon, gardener to the Earl of Ilchester, Holland House, Kensington, staged a good dish of Beurré Rance, grown on old standard trees, which were very satisfactory.

From Mr. Alfred Ray, Chiswick, came two dishes of the old stewing Pear Catillac, which were large and well developed.

Floral Committee.

Present: W. Marshall, Esq. (in the chair); and Messrs. O. Thomas, C. T. Drury, G. Nicholson, H. B. May, R. Dean, J. H. Pitt, G. Reuthe, J. Hudson, J. F. McLeod, J. Fraser, C. Jeffries, W. Bain, C. E. Pearson, C. E. Shea, W. J. James, C. Blick, Geo. Paul, and H. J. Jones.

Messrs. Jas. Veitch & Sons, Ltd., staged a number of plants of the new *Coleus thyrsoideus* arranged with a few Palms and embedded in Maidenhair Fern. The *Coleuses* were the same plants as those staged six weeks ago, clearly showing the lasting properties of the plant, also a plant of *Thibaudia macrantha* in flower. Messrs. Geo. Jackman and Son, Woking, sent a few hardy flowers, comprised of *Helleborus orientalis*, Queen of the Netherlands, and Mars, both well flowered, with dull red blossoms. The little Irises, *Bakeriana*, *histrioides*, and *sindjarensis* were all interesting at this period, as were *Daphne Blagayana*, a white flowered species, and a pan of *Cyclamen Coum*. From Messrs. Barr & Sons, Covent Garden, came some good bowls of the Chinese Sacred Lilies, also Roman Hyacinths grown in the same style, with pots of the sulphur and white Hoop Petticoat *Narcissi*, making a pretty exhibit.

Mr. J. Russell, Richmond, staged a large table of berried *Aucubas* growing in 5-inch pots. The plants were dwarf, many not being over a foot high, and berried splendidly; these were *A. longifolia*, *A. vera*, and *A. japonica* (silver Flora medal). From Mr. W. Bain, gardener to Sir Trevor Lawrence, Bart., Burford, Dorking, came a basket of *Primula floribunda grandiflora isabellina*, a pretty pale primrose variety. Messrs. Wallace & Co., Kilnfield Gardens, Colchester, staged Irises *Darfordiae*, *Bakeriana*, and *Heldreichi* in pans in capital style. Mr. C. T. Wakefield, 58, Hendon Street, S.W., exhibited specimens of his flower holder known as "Floral Aids," with flowers in some of them which clearly demonstrated their value to the decorator.

The Rev. W. Goodliffe, Worthing, staged two plants of a *Pelargonium* from Central Africa, bearing pale yellow flowers. It is a curiosity and novel on account of its colour. Messrs. Sinclair & Co. exhibited a number of syringes and diffusers in various sizes and forms. Mr. J. Fitt, gardener to Mrs. F. W. Champion, Reigate, staged some cut sprays of *Manettia bicolor*, and a plant of the white Hoop Petticoat *Narcissus*.

Orchid Committee.

Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, R. B. White, H. J. Chapman, W. H. Young, H. A. Tracy, J. W. Potter, F. J. Gabriel, E. Hill, T. Rochford, A. Hislop, J. Jaques, T. W. Bond, E. Ashworth, W. Cobb, J. Colman, J. Douglas, H. Ballantine, and C. J. Lucas.

Messrs. J. Veitch & Sons, Ltd., Chelsea, contributed the only collection of Orchids. The group comprised plants and cut flowers, the latter mainly consisting of *Lælio-Cattleyas* and *Cypripediums*. Amongst the plants in pots were *Angræcum sesquipedale*, *Cymbidium Traceyanum*, *Zygopetalum Mackayi*, *Lælio-Cattleya Wellsiana*, *Epidendrum atrò-purpureum album*, and *Zygopetalum leucochilum*. All were well grown and arranged (silver Flora medal).

Mr. G. E. Day, gardener to H. F. Simonds, Esq., Beckenham, sent *Lælia anceps Simondsii*, and a magnificently grown plant of the rare *Dendrobium spectabile*. Mr. J. Guyett, gardener to C. D. Kemp Welch, Esq., Ascot, showed *Cypripedium Spicerianum Broadlands* var.; and Mr. F. M. Burton, Gainsborough, staged a charming dark-coloured *Cattleya Walkeriana* designated Highfield variety. Mons. F. Claes, Brussels, showed *Epidendrum Claesianum* in excellent form.

Mr. Hislop, gardener to H. S. Leon, Esq., Bletchley Park, staged *Sophronis grandiflora gigantea*: while Mr. de Barri Crawshay showed *Odontoglossum Wilckeanum* Lionel Crawshay. *Lycaste lasioglossa*, from Messrs. B. S. Williams & Son, Upper Holloway, received an award of merit. Mr. H. Ballantine, gardener to Baron Schröder, Egham, contributed a group of cut Orchids, including some of much beauty. Messrs. H. Low & Co., Bush Hill Park, sent *Cypripedium callosum aureum*, with the type for comparison. Mr. T. Stafford, gardener to F. Hardy, Esq., Tyntesfield, Manchester, Ashton-on-Mersey, exhibited cut *Cypripediums* in variety.

Certificates and Awards of Merit.

Cyclamen libanoticum (Jackman & Son).—A hardy species with pale lilac flowers, flushed with red at the base of the petals (award of merit).

Dendrobium Ashworthæ (H. Holbrook).—A peculiar *Dendrobe*. The pointed sepals and the lip are pale green, and the rounded petals paper white (award of merit).

Pear Josephine de Malines (Veitch & Sons).—Too well known to need description (first-class certificate).

Primula floribunda grandiflora isabellina (W. Bain).—An extremely floriferous form, with pale cream-coloured flowers (award of merit).

Lælia anceps Simondsii (G. E. Day).—A beautifully-formed white variety of the well-known Orchid (award of merit).

Lycaste lasioglossa (B. S. Williams & Son).—The sepals of this are bright brown, and the petals clear yellow (award of merit).

Odontoglossum Fairy Queen (Mrs. Briggs Bury).—A beautifully formed variety. The very broad sepals and petals are yellow and white, with large brown spots (award of merit).



Imantophyllum miniatum.—This is one of the most useful plants for forcing into bloom about Christmas and onward that can be had. It is free flowering, and merely requires to be grown throughout the winter months in a genial temperature to insure it flowering annually at the dull season. In summer it is best grown in a greenhouse. Plants which flower now do so again about June. The flowers are admirably adapted for vase decoration. I employ loam and crushed lime rubbish as potting material, and do not stint the water.—B. B.

Soil for Asparagus.—There can be no doubt that burnt soil and rubbish are admirably adapted for mixing with soil for Asparagus beds. I had collected all the summer and autumn grass from the lawns, prunings, edgings from the sides of walks, rough leaves, and small branches from amongst the shrubs—in fact, all kinds of rubbish that would burn; and by the end of the season I had a valuable heap of ashes and old soil, as well as an abundance of old leaf soil and sweepings from the lawn. I have now full and good beds of Asparagus. When old potting soil and garden rubbish prove to be of value for growing this as well as other kitchen garden crops, who would grudge the time and labour required in saving and preparing it if such advantages are to be gained?—PRACTICE.

Spiræa astilboides.—Although this *Spiræa* will never displace the old and useful *S. japonica*, it is nevertheless invaluable for its gracefulness. *S. astilboides* bears gentle forcing only, and three good batches may be obtained, the first by gentle warmth after the plants have started well into growth, the second by cool greenhouse treatment, and the third by keeping the plants outside, behind a north wall, as long as possible. Plants that have been flowered in pots will bloom again if they are well cared for, but they do not flower as well as those that have been purposely prepared for forcing. It is a good plan to have a stock of plants, so that they can be flowered in pots every other year. After flowering the plants may be divided, and planted out, when the weather is favourable, in deeply dug and well manured ground. It is imperative that a sunny, open spot should be selected for them.—O. B.

Winter Shades of Green Colour.—During mild winter weather large tracts of vegetables in fields afford an interesting study in the various shades of green they display. Brussels Sprouts in large breadths gives the lightest tint of green. The Cauliflowers and Broccoli are somewhat of a metallic hue, a kind of greyish green. Cabbages and Savoy have a rich dark green appearance, some plants scattered among them, and further advanced in growth, showing developed hearts with leaves conspicuously lighter in tone to the rest. The peculiarly curled and beautifully divided foliage of Scotch Kale is most attractive in winter before severe frosts have injured it. The grass fields vary in colour, some being grey and at their lowest minimum of colour, while others assume spring-like verdure. Unploughed fields show here and there patches of luxuriant weeds, producing a mass of vivid colour where they grow rankly.—M.

Apple Prince Albert.—The value of this good-keeping Apple can scarcely be over-rated. I have several trees of Lane's Prince Albert, which, though perfectly healthy, make slow progress in the formation of desirably large trees, from the fact that they bear too freely to allow of an extension in growth of branch. I have seriously considered the advisability of picking off all, or nearly all, the fruit next season if the weather should favour a perfect set next spring, in order to encourage some growth in the tree. This is the only fault I have to find, if it can be considered a fault, with Lane's Prince Albert. The fruit is of handsome shape, and when exposed to sun has a bright cheek. I would willingly extend my stock by grafting one of the larger trees of another sort, but it cannot be done just now, for the reason that there are no shoots obtainable suited to the purpose. To owners of gardens of very limited area it should have a particular value by reason of its slow or moderate growth and free-fruited tendencies.—W.

Baskets for the House in Winter.—Except in the case of a temporary decoration these should not be large, and their filling should be restricted to few rather than many kinds of plants. A wire basket lined with a sod of wild Polypody or dwarf greenhouse moss, and filled in all over with red Oxalis, is quite charming. The under side should be a drapery of running Tradescantia, variegated Panicum, Othonna, or similar plants, and the bowl filled with Pandanus, Dracænas, Asparagus, Cyperus, Rivina, Begonias, or Ferns. Ivy alone is often used in these baskets. Russellia juncea and Petunias are also used, each one by itself, and a favourite and very pretty way of growing Ivy-leaved Pelargoniums is alone in baskets. Saxifraga sarmentosa and its coloured varieties make attractive subjects when grown in suspended pots. And Cactuses and other succulents usually look better alone than when mixed with other genera, for instance, Epiphyllums, drooping Cereus, and pendent Mesembryanthemums.—P. P.

Annual Tree Lopping.—The extent to which large trees, such as Limes, Acacias, Poplars, are lopped and cut in the winter time until they appear like contorted broomsticks attached to a growing trunk or stem is a matter of great regret. Fancy an avenue of such trees, three or four perhaps, before each villa residence in a fashionable thoroughfare, and also in private gardens. Lime trees seem to be badly used in this respect. Why should trees be planted thickly in a town street and every one unmercifully pruned back each winter, leaving six or eight twisted stems with gnarled and knotty excrescences upon them, caused by the constant pruning to one point? I like to see trees growing by the roadside throwing a grateful shade of foliage in summer upon the hot pavements. But I would plant less thickly and prune on a different system, cutting away the lower branches which may obstruct, and regulating others. In this way the trees make less annual growth; they are more shapely, and instead of being eyesores in winter they are beautiful pictures then as well as in summer.—D.

Cleaning Houses.—Before the season for potting arrives this work should be pushed forward. Houses that were washed in autumn should be done again. No plants ought to be repotted if they are infested with insects until after they have been thoroughly cleaned. If this work and the cleaning of houses are delayed until the potting is done, the plants are often seriously checked while the operation is going on, instead of receiving every encouragement to make luxuriant growth. The woodwork and glass should be thoroughly washed with soft soap and hot water, and if mealy bug has infested the house add 1 pint of paraffin to every 4 gallons of water used for this purpose, or paint the house with pure paraffin. The walls must be lime-washed with hot lime, and, if necessary, add paraffin to this also. The pipes and staging, if ironwork, should be painted. Lampblack and boiled oil form a very suitable mixture for this purpose, but should be mixed very thin. The gravel or other material upon which the plants stand should also be washed or replaced with fresh. The stonework and paths, if flags, can be thoroughly cleaned by the application of a little chloride of lime.—G.

Rivinas.—For upwards of 200 years evidence is forthcoming of these plants being cultivated in English gardens, and in spite of many other ornamental fruited plants being introduced for conservatory decoration at various times they are still among the prettiest and most graceful plants of the whole set. Several species are cultivated, but two only are really distinct from a gardener's point of view. *R. humilis* makes a bushy plant, producing from the axils of the leaves dense racemes several inches long of small white flowers, which are succeeded by small bright red fruits. As flowers are produced for several months a nice contrast is made between the white flowers on the upper parts and the red fruit on the lower, the general effect being heightened by the bright green leaves. *R. lævis* and *R. tinctoria* have white flowers and red fruits, differing in size slightly from those of the foregoing, and also in the size and hairiness of the leaves. The species most distinct, from *R. humilis* is *R. aurantiaca*, it has larger leaves and bright golden yellow fruit. Like the former it is a South American plant. They are of easy cultivation. Seeds sown in spring will produce good plants 2 feet high by the end of summer, which will flower and fruit freely for several months. Frequent stopping is necessary to induce a bushy habit. By sowing at intervals of two or three months a succession can be kept up throughout the year. For grouping with white flowered forced plants they are very useful, the fruit showing well among the flowers.—G. K. R.

Sweet Peas.

(Continued from page 36.)

THE following is a selection of desirable varieties classified somewhat as to colour. White flowered varieties are perhaps more popular than any others, as they are so useful in floral work. Sadie Burpee, Emily Henderson, and Blanche Burpee well represent this colour; any one can be chosen without risk of failure. Navy Blue is one of Burpee's seedlings; the standards are a brilliant royal purple and the wings violet with a lighter keel. Countess of Cadogan has slightly hooded standards of bright shining violet overlaid with a pleasing tint of sky blue; the wings are sky blue with a lavender keel. Blue coloured varieties are well represented by Duchess of Sutherland, pearly white, delicately suffused with light pink. The blossoms are widely placed on the stout stems, which is an advantage. The standards are slightly hooded. A pleasing flower also is Countess of Aberdeen, white suffused with pale pink, with finely formed standards. Mrs. Fitzgerald, soft creamy tint, flushed and edged with pale rose, is also useful. Claret tinted flowers are represented by Duke of Westminster, a deep rose-tinted maroon, overlaid with bright violet. Venus is still one of the best of varieties with cream white ground. The colour is salmon buff, the standards delicately shaded rosy pink. Lady Beaconsfield has salmon rose-tinted standards and pale yellow wings.

In the crimson flowered section we have several desirable varieties. Mars is fiery crimson, which deepens with age; Salopian, Wideawake, and Firefly are also good sorts belonging to this section. Duke of Sutherland well represents the indigo-tinted section. The standards of this variety are claret flushed with maroon at the back; the wings are a bright indigo blue, the keel is of a pale blue tint. Several charming varieties represent the lavender section. Lady Grisel Hamilton is perhaps the most attractive of all the colours; is a shining pale lavender. Lady Nina Balfour is also a conspicuous variety, a shade paler in tint than the former. Golden Gate, although belonging to this type, is somewhat different in colour—pinkish lavender, with a rose pink suffusion of the standard, deepening towards the base. Queen Victoria, Mrs. Eckford, Golden Gleam, and Cream of Brockhampton well represent the yellow flowered division. The former is the most desirable. Its flowers are of great size, supported on stout stalks; colour soft yellow with just a suspicion of purple. Scarlet tinted sorts are to be found in Prince Edward of York. The standards are red, but the wings are pale puce, which detracts from its merits as a scarlet flowered sort.

Orange coloured varieties are represented by no less than eight sorts. Gorgeous, an American raised seedling, is the best; the standards are of salmon orange and the wings soft rose with deeply coloured veins. Lady Mary Currie has deep orange pink standards, the wings flushed with rose. Lovely is a pink flowered variety with a deeper suffusion at the back of the standard. Duchess of Westminster has somewhat small blooms, but is novel in colour; the wings are flushed pink, deepening in the standard, and terminating with a flushed apricot suffusion. Hon. F. Bouverie has a coral pink standard, veined deeper, wings pale pink. Lady Skelmersdale and Colonist both represent the lilac coloured section. The former has bright rosy lilac standards; the white wings are slightly tinted with the same hue. Colonist has soft lilac wings and rosy lilac standards. This is a vigorous growing free flowering variety. Magenta coloured varieties are not numerous. Calypso is the best of the section, and one of the finest Sweet Peas in cultivation. The bold standards are of rich bright magenta tint flushed with mauve; the wings are a delicate mauve, forming a striking contrast. Maroon coloured varieties have four names, any two is sufficient. Black Knight is perhaps the most desirable, although Othello might be preferred by some. The former is a deep maroon with an intense metallic lustre on the standard; keel pale purple, which gives a distinct character to the flower. The mauve coloured section is a distinct and pleasing one. Fascination, a new American variety, is splendid; the standards are of a delicate magenta mauve, the wings deep mauve, and when on the plant or in a cut state it is delightful. The growth is vigorous, and the blossoms freely produced. Dorothy Tennant is somewhat old, but still one of the best. The wing colour is puce violet, with rosy mauve tinted standards.

Monarch is perhaps the only variety that can be classed under the head of purple. The standards are a bronzy crimson tint, with wings of an intense deep blue colour. Rose coloured varieties are numerous, quite twelve might be chosen. Her Majesty is still one of the best—a soft rosy pink self. Prince of Wales strikes many persons as a handsome variety; the standard has a bright rose tint with deeper veining and paler wings. In Lord Kenyon the standards are flushed and veined more deeply with rose. Chancellor is a distinct variety; it is a rose self, heavily veined with a deeper tint. Triumph is charming with its deep rose coloured standards and paler wings and keel.

The striped section is now numerous in variety, many having

lately been added. This section does not, however, appeal to all in the same way that self-coloured sorts do. Princess of Wales is quite the best of those with purple or mauve stripes. Mrs. Joseph Chamberlain, white, striped and heavily flaked with rose, is a bold variety, although somewhat old. America has perhaps the brightest tint of colour, scarlet on a white ground. Midnight will appeal to the majority of cultivators. The standards are quite waved with a bronzy tint on a purple white base. If more are required Aurora, Gaiety, Senator, and Mikado may be included.

New varieties did not appear to be numerous during the last season. Mr. H. Eckford has the following, which are worthy of addition:—Miss Willmott is best described as an improvement upon Gorgeous. The growth is vigorous with strong flower stalks and extra large blossoms. Jeanie Gordon is a hooded variety, with pale rose tinted standards and cream white wings veined and flushed with carmine. Lady M. Ormsby Gore is after the style of Queen Victoria, except that the blooms are more inclined to pink than that variety. George Gordon is best described as a distinct lake-coloured self.—E. MOLYNEUX.

Currants.

CURRENTS are, it is true, the smallest of our "small fruits," and as a general rule they receive a correspondingly small amount of attention. An ordinary crop of Currants may be secured with little attention, and thus their accommodating natures are imposed upon. First-class fruit and first-class crops, however, can only be obtained from Currant bushes where care and attention are bestowed upon their cultivation. What a contrast between the crops and the quality of the fruit as seen in Covent Garden, from the market gardens round London, and those in most private gardens throughout the country! The produce is in general more than double, and the quality beyond comparison. Why should this difference be? Is it indifference? I almost think so. Are Currants deserving of this cool treatment? Few will answer in the affirmative. They do not take high rank as a dessert fruit it is true, only being called upon for the sake of appearance in times of scarcity (the White excepted a little); a few strange palates relish the acid Red. When large and very fine, their handsome appearance tempts many a one to try them; it is, however, mainly to the kitchen they must go, to make tarts and pies, and to the confectioner to make preserves.

Where is the household that can be without its Red Currant jelly and its Black Currant jam? Small ordinary Currants do not make so good a jelly as fine, large, well-grown fruit does, and double the quantity is required, nor so good a jam, there being too many "skins and pips," and too little of the nectar itself. To the consumer the one is almost double the value, measure for measure, of the other, and actually more so to the producer, taking into consideration the scanty crop, and the great waste of time involved in gathering it. In proportion to size, the Red and White Currants will bear a greater weight of fruit than any other of our fruiting plants. The bulk of fruit will often exceed the bulk of the entire plant, leaves and stems together.

To secure standard Currants, nothing more is required than to select some of the strongest cuttings, put them in at good length, tie them to a stake, and let them grow to the desired height before allowing them to branch out. It imparts vigour to shorten them in winter some few inches, and if more than one bud breaks pinch them all back to the one leader. To form the head, allow three shoots only the first season, and in winter cut these back to 3 or 4 inches. The shoots formed after this may be reduced in summer to five or six, or in winter to that number, cutting them back to the length of about 4 inches, the supernumerary ones almost close, leaving only a short spur. The head must never be allowed to become very large, because of the danger from wind. The points of the growing shoots might for this reason be also stopped, if found to become straggling during summer.

Currants may be grown in many other forms, such as the pyramidal. Pyramidal Currant trees are very pretty, but the plant does not assume that form naturally; the tree is long in being formed, and it requires a considerable amount of care in pruning to retain the shape. They may be trained to trellises with good effect, and on walls—on north walls, too, where few other fruits will exist. Currants on north walls are exceedingly useful, as they can be so easily protected from birds, and they afford a late supply—even as late as Christmas. I have frequently observed in private gardens in the country that the crop of Currants on the walls has been much finer than those on the bushes in the open quarters. The reason why I could not well tell until lately, when I began to think of the different systems of pruning practised; those trained as bushes are neglected as to their pruning, whilst those on the walls, for the sake of appearance, are regularly spurred in. This system I shall now attempt to describe.

Having the cuttings—Irish cuttings, *i.e.*, rooted, and two years old—ready to plant, in the market gardens they are planted in lines 6 feet

by 4 feet to allow of cropping between the lines, in good rich soil; for Currants, be it remembered, require a considerable quantity of manure to grow them well. In February prune the shoots down to about 3 inches; then, in the following spring, select four or five of the shoots

cutting all the shoots back, excepting those forming the framework of the bush (and these to 6 or 7 inches), to within an inch or so of their base; no matter how many or how strong and fine they may be, off they must come, the height which Currant bushes are allowed



CURRENTS RED AND WHITE.

which will give to the bush the most natural cup-like form, and reduce their length to about 6 inches, these shoots being intended to form the permanent bush. All the other shoots should be cut in to within an inch of their base, where the fruit will be borne in clusters.

The following season in pruning pursue exactly the same practice,

to attain being about 4 feet. This pruning, cutting, and slashing in a field of Red Currants seems sad havoc and destruction to the uninitiated; the ground is strewn with wood and shoots, more than half of the plants being out away—all the fine young shoots, indeed—and nothing left but four or five gnarled, knotty, and very ugly stems from which to obtain

fruit, and to get which would seem impossible; yet when the warm showers of spring descend, the plants are soon draped with a thick garniture of their pretty simple flowers, and then with the fruit. So thickly does the fruit hang on these ugly sticks, when well cultivated, that it may literally be gathered by handfuls.

On no account must the bushes be deprived of their leaves in summer. In some gardens in the country I have observed a practice of cutting back the shoots with hedge-shears, on the plea of admitting light and air to the fruit. It is altogether a bad practice, and severely to be condemned. To attain the utmost success in Currant culture, follow the practice of our great cultivators, who make it a paying matter—that practice which I have just described. Be not afraid of making the plants grow too strongly, for the more strongly they grow the greater the crop they will bear. Apply plenty of manure, and prune them hard back, and the result will be astonishing.—A.

Notes on Cucumbers and Melons.

THE cultivation of Cucumbers has undergone a great change during the latter half of the nineteenth century. At the middle (1850) pits or small houses set apart for the production of Cucumbers and Melons were the exception rather than the rule in even what were then termed good gardening establishments. I allude to lean-to, three-quarters, and span-roofed structures heated by hot-water pipes, these being employed both for bottom and top heat. In a few instances the tank system was in vogue, Rendle being the propounder, and this mode of affording bottom heat and of maintaining the atmospheric temperature was regarded as the most satisfactory, and in accordance with the principle of heating by fermenting material which had been practised from the time of the ancient Romans.

As heating by flues preceded the hot-water system, pits were occasionally met with having a flue along the front and sometimes at the back for top heat, with a pit for holding fermenting materials to furnish a good bottom heat at the start and give off the moisture and evolve the ammonia found so favourable to healthy growth as to prejudice cultivators in favour of heating by fermenting materials. Some growers are still old-fashioned enough to hold that there is nothing like a bed of fermenting material for bottom heat and for profiting the subjects in early forcing operations. To this creed I adhere, partly from the principle of utilising materials that practically cost nothing but the labour of collecting and putting to profitable use, and mainly on the ground of the favourable nature of the procedure.

But the requirements of the advanced age—that of Cucumbers all the year round—could not be met with certainty by the sole employment of fermenting material, hence recourse to, at first, auxiliary aid from flues, and afterwards from hot-water pipes. The latter system of heating has, in many establishments, entirely superseded fermenting material and flues, and in not a few instances, especially marketing establishments, bottom heat has been entirely dispensed with. Nevertheless, there are still some places where both Cucumbers and Melons are grown, and that very successfully, in pits and frames heated absolutely by fermenting materials, hence a few notes thereon will be seasonable.

Raising Cucumbers in Frames.

Most people make a point of having fruit by Easter. The weather has much to do with producing Cucumbers early, and the means at command often make all the difference between one gardener having them by a given time and another not. The starting period has something to do with matters of this kind, but there is little gained in time, and certainly much expended in labour and material, by commencing very early. Indeed, I have found that early February is a good time to start seeds for raising plants to fruit from April onwards. The material for making up the bed being collected, two parts leaves and one part stable litter should be thrown together in a heap, moistening if necessary, and when warm turning outside to inside, again sprinkling with water if any parts are too dry, will part with rank steam and induce a sweet, regular heat. A site for a bed should be chosen with a full south exposure, and having shelter to the north, as that of a hedge or wall. In forming the bed heat the materials well down with the fork as the work proceeds, and a few pea sticks placed across and along the bed at intervals not only prevent overheating but admit heat from linings being conveyed to the interior of the bed. For early work frames with double sides are preferable. In about a week from making the bed the heat will be up. Level the bed, replace the box, apply sufficient sweetened material to raise the inside to within 2 or 3 inches of the top of the inner frame or cavity, placing apparently dry leaf soil or spent tan for plunging the pots in. To raise the plants half fill 3-inch pots with rich light loam, placing one seed in the centre of each pot, covering about a quarter of an inch deep with fine, moist soil, so that no water is required for the germination of the seed. Space is thus left in the pots for top-dressing, which is preferable to potting the seedlings. Cover the pots with a square of glass, which hastens the germination, but remove it as soon as the plants appear. The plants from a sowing made early in February will be fit to plant out early in March.

Cucumbers in Houses.

Young plants from seed sown at the beginning of the month should be top-dressed and be transferred to larger pots as they require more root-room, keeping near the glass, putting a stick to those required for trelliswork, and removing the side growths or laterals as they appear up the height of stem required to reach the trellis. The soil should consist of medium textured fibrous loam, with a fifth of thoroughly reduced manure, and a little charcoal to keep the compost open and sweet. If a sprinkling of air-slaked lime and soot in equal parts be mixed with the soil it will be advantageous. The house for the plants to fruit in should be thoroughly cleansed, the woodwork with soap and water, glass with clear water only, both inside and outside, and wash the brickwork with hot lime. If there has been any eelworm scald the bedwalls or wooden troughs with boiling water, and the bottom must be well soaked with it. Place the soil for the plants in a ridge, flattened at the top, and about 10 inches deep, and when warmed through turn a plant out in the centre of each light, or about 3 feet apart. Secure the stick to the bottom wire, and rub off the laterals up to the trellis. Maintain a night temperature of 65° to 70°, 70° to 75° by day, advancing to 85° or 90° from sun heat, keeping the bottom heat at 80° to 85°.

To maintain steady progress in the winter-fruiting plants and secure straight fruit, the temperature should be maintained at 65° at night, 5° more in mild, and 5° less in severe weather, 70° to 75° by day, advancing to 80°, 85° or 90° from sun heat. When the external air is mild a little ventilation may be given at 80°, closing before the temperature is reduced below that degree, but it is better to close so as to secure 90° to 95° in the early afternoon, and at all times exclude external cold air, which induces stunted and curled fruit. Young plants coming into bearing must not be cropped too heavily, giving them all the assistance possible by removing the male flowers, also surplus female blossoms as they appear. Plants in bearing will require to be examined about twice a week, removing all weakly and exhausted growths, reserving as much of the young bearing wood as is necessary for filling the allotted space, stopping the shoots at one or two joints beyond the fruit.

Let the root and atmospheric conditions of moisture be governed by the state of the soil and external circumstances. Avoid over-watering, and supply liquid manure when vigour is needed. Except on very fine days syringing should not be practised over the foliage, a light sprinkling on fine afternoons being beneficial, but damp the floors moderately about 8 A.M. and 2 P.M., also in the evening if the surfaces become dry. Encourage the roots to spread in the surface of the bed by adding a little fresh lumpy loam from time to time, and feed them with a little approved fertiliser occasionally, say a small handful per square yard. If there be any lack of colour in the foliage or fruit use that amount of light dry soot, the nitrogen and mineral matters of this substance encouraging the development of the chlorophyll. If aphides appear fumigate on two consecutive evenings. Dust with flowers of sulphur on the first appearance of mildew or lightly coat the hot-water pipes with a cream formed of skim milk and flowers of sulphur as an antidote to it, also for destroying white fly and as inimical to red spider, and arrest canker by rubbing quicklime into the affected parts.

Melons.

Seeds sown early in the month have progressed so that the plants are in second leaf, and root action now proceeds rapidly, therefore attend to earthing, and when the small pots are occupied with roots place the plants in 5-inch pots, always watering in advance of shifting, so that the roots are all preserved in turning out the plants, and not allowing them to become root-bound. Keep near the glass in a temperature of 65° at night and 70° to 75° by day, advancing 10° to 15° or more from sun heat. Place a small stick to each plant for its support until it is large enough to transfer to a hillock in the Melon house, rubbing off the laterals as they appear up to the height of the lowest wire of the trellis.

Heavy loam is the best for Melons, the top 3 inches of a pasture grazed by sheep laid up until the herbage is reduced, and then chopped up moderately small. An admixture of old mortar rubbish to the extent of about a sixth supplies lime and grit, and the plants grow sturdier for a supply, and a quart of soot and 2 quarts of wood ashes to 3 bushels of soil improve this for Melons, while rendering it distasteful to wireworm and slugs. A fourth of thoroughly decayed manure may be employed in the case of poor soil. The materials should be under cover a few days to dry, when chop up the turf, and turn twice to thoroughly mix the ingredients. In due course the compost should be placed in the Melon house similar to that for planting Cucumbers. For frame culture seed should be sown early in February. The materials must be prepared and the bed made up forthwith in the manner described for Cucumbers.—S. A.

Canadian Apples.—A vessel recently arrived at the Custom House Docks with 19,350 barrels, or nearly 60,000 bushels, of fine Canadian Apples. As many hundreds of thousands of barrels of Canadian Apples have yet to come across, large supplies of them will be assured until May, when the Tasmanian shipments will be in full swing.

Strawberries in Pots.

ANY hurrying of the plants, even those that are to afford fruit at a stated time, may result in a bad set and ill-shapen fruits. Proceed, therefore, steadily; a temperature of 50° to 55° is ample for those started in December, that not being exceeded on dull days, when the night and day temperatures vary little, and 60° to 65° in the daytime with gleams of sun, up to 70° to 75° with bright sun, will bring the plants on quite fast enough for insuring a satisfactory result. Ventilate whenever there is a chance. The trusses rise boldest and the flowers are strongest when the plants have the foliage sturdily formed, and that elaborates more food and is healthier than drawn and thin.

Close atmosphere induces soft tissues, weakly organs of fructification, imperfect sets, and deformed, badly shapen fruit. La Grosse Sucrée, however, seems to do better in moister atmosphere than most varieties; even Black Prince and the better variety, King of the Earlies, forgets to mildew when it is syringed, also when a little sulphur is placed on the hot-water pipes in good time, so that the fumes make speedy work of the germinal tubes of the spores, and then the mildew (*Oidium balsami*) is not in evidence. Another plague is the aphid. These creatures pass the winter in the egg state, which appear as little black specks on the under side of the leaves, and start into life directly the growth takes place in the buds. Therefore keep a sharp look out and fumigate with tobacco, or vaporise with nicotine directly the first is seen, and repeat at intervals, for it does not answer to do either after the blossoms appear.

Introduce more plants to shelves in Peach houses or vineries started about this time. Rectify the drainage of the pots, remove moss or other matter from the surface of the soil, and wash the pots clean. Surface dress with an approved fertiliser mixed with a little thoroughly decayed manure rubbed through a sieve. There is nothing better than a quart of soot and a similar amount of superphosphate mixed with a bushel of turfy loam, or blood manure (blood dried and ground to a powder), superphosphate, and wood ashes in equal quantities and amount last named, are excellent for stimulating and sustaining growth.

Royal Sovereign is a good variety for introducing now, also Noble and Auguste Nicaise, these producing large fruit, and are very prolific. President, Sir Joseph Paxton, and Sir Charles Napier may also be introduced, but to maintain the succession plants of La Grosse Sucrée or Vicomtesse Hericart de Thury should be introduced at the same time. Lucas is one of the best forcing Strawberries, and the quality is unsurpassed. It is a neat grower, and deserves extensive cultivation, but is better for home use than for marketing.—PRACTICE.

Young Gardeners' Domain.

"An Old Boy" Speaks.

MAY I be permitted to thank "J. S., Aigburth," for his kindly thought and reciprocative greeting on page 41? His allusion to the "trials and troubles" of bothyites, which, as I well know from experience, are not a despicable quantity, prompts the further expression of a thought for those young gardeners who perforce of circumstances are for the time being relegated to lodgings outside the garden. An example of this kind has lately come into my experience, and doubtless there are many others to be found in the great gardening world. The typical lodging outside of the garden, with all its impedimenta, often including, as the case in point does, a brace of babies, seriously militates against a young fellow's self-improvement in the leisure hour. In this particular case the garden office has been opened to the one deprived of those privileges and comparative privacy the bothy affords, and it is gratifying to note that the advantages are both availed of and appreciated, the old "head" guiding the young hand through the intricacies of the drawing-board, and encouraging the youthful aspirant to higher flights amid the fairly representative stock of garden literature the said office contains. It is pleasing to interpret the signs of the times as pointing to brighter prospects on the gardening horizon at the dawn of the new century, hence this note of acknowledgment to "J. S." may include congratulations to all young friends from—AN OLD BOY.

Spread of Botanical Science.—We learn that the prizes offered by the Paris Academy of Science this year include the following:—The Gay Prize (2500 fr.), for a study of the distribution of Alpine plants in the mountains of the Old World; the Bordin Prize (3000 fr.), for a study of the influence of external conditions upon the protoplasm and nucleus in plants; the Desmazières Prize (1600 fr.), for a study of cryptogams; the Montagne Prizes (1000 fr. and 500 fr.), for researches on the anatomy, physiology, description, or development of the lower cryptogams; the Thoré Prize (200 fr.), for the best work on the cellular cryptogams of Europe; and the De la Fons Melicocq Prize (900 fr.), for botanical work done in the north of France.



Fruit Forcing.

Vines—Early Forced in Pots.—When the Vines have developed growth and foliage, root action, provided the medium is in a suitable condition, proceeds rapidly, as the evaporation of water from the leaves is considerable during daylight, and the atmosphere drier in consequence of the sun's influence or from ventilation. Up to leaf formation Vines in pots should be kept on the dry rather than the excess side of moisture at the roots, then they will form fresh rootlets, and be in a position to absorb and transmit abundant supplies of nourishment; this is absolutely essential after the first formed leaves are full sized, but at no time may the supplies be such as to produce a soddened condition. During flowering the Vines should have a night temperature of 70° and 75° by day, with 10° to 15° rise from sun heat. Attend to thinning as soon as the berries are swelling, indeed, it should be done as soon as the fruit is set. Encourage growth above the fruit, yet only as much as can have exposure to light. Surface-dress the soil with short manure, and when roots are emitted freely from the collar some turves may be placed around the rims of the pot, extending about a couple of inches inside and over them, so as to be on the fermenting material. Let the temperature range from 65° to 70° at night, 70° to 75°, and 80° to 85° or 90° from sun heat; ventilate from 75°, allow the proper advance from sun's influence, and close early so as to raise and maintain a temperature of 85° to 90° with the aid of sun during the early part of the afternoon. Avoid syringing the foliage after the Grapes commence swelling, as there is always danger of the water leaving a deposit, which spoils the appearance of otherwise well grown and finished fruit. There must not, however, be any deficiency of atmospheric moisture, but damp the floors and walls in the morning, early in the afternoon, and if necessary in the evening. Keep the evaporation troughs charged with weak liquid manure.

Early Houses.—If any Vines were started in November or early December they will be making progress, and need the greater care in ventilating, not admitting cold air, draughts crippling the foliage and rusting the berries, and both on that account are unable to perform their functions, the former not assimilating food, and the latter not swelling properly. Disbud and tie the shoots before they touch the glass. In stopping, which should be done when the leaf at the joint is about the size of a halfpenny, allow two or more joints of growth beyond the show of fruit, or where there is room; do not confine the stopping to any given number of joints beyond the bunch, but extend the growth, so that an even and ample supply of foliage will be insured. Crowding, however, is very disastrous, therefore allow no more foliage to be made than can have full exposure to light and air. Remove all superfluous bunches early, incipient clusters being inimical to a good set and prompt swelling of the berries. When the flowers are open maintain the temperature night and day at 70° to 75°, with a rather dry atmosphere, not going to the extreme of depriving the air of the needful moisture essential to the health of the foliage. If there be any Muscat of Alexandria keep the points of the bunches well up to the light, and fertilise the flowers when fit with pollen from free-setting varieties.

Houses Started at the New Year.—Many growers still cling to the old-fashioned Black Hamburgh and Buckland Sweetwater, or Foster's Seedling, as the best for early marketing purposes; but some prefer the higher quality Grapes, as Madresfield Court and Muscat of Alexandria, and getting good samples of these early in June, make a larger margin of profit and a surer sale, as there is less danger of a glut, and when it comes to choice the higher quality fruit takes precedence. The borders for these high-class varieties require to be wholly inside, and to be composed of thoroughly sound materials over perfect drainage, then they are as easily managed as other Grapes, if care is given to the setting of the fruit. Duke of Buccleuch is superior when put into the market in good condition, but it is a bad traveller compared with the Muscats, as its skin discolours with the slightest jolt of one berry against another, and this is pretty often in travelling by rail. With a proper moisture at the roots, and a genial atmosphere, the Vines previously forced soon break, especially if a little liquid manure is used on the floors by sprinkling. Syringe the rods two or three times a day with clear water, maintaining a temperature of 50° to 55° at night, 60° to 65° by day, ventilating freely above 65°. For Muscats, allow 5° more all round. The roots and canes of young Vines should be slung in a horizontal position to secure the buds starting evenly.

Late Houses.—Thick-skinned Grapes require to be kept cool and uniform in temperature. This can hardly be assured to them after the sun gains power without covering the lights. However, we have not found the Grapes keep so well on the Vines as in a suitable Grape room, which means any dry compartment from which frost is excluded and not liable to sudden fluctuations. The Grapes should be cut with as

much wood as can be spared, the stems placed in bottles filled with soft water, each containing a few pieces of charcoal. The bottles must be placed in an inclining position, so as to admit of the bunches hanging clear of the sides, and they may be as far apart as not to touch each other in the bunches. Keep the temperature of the room at 40° to 45°, examining the bunches occasionally for decayed berries, which must be carefully removed. The Vines should then be pruned, dressing the cuts with styptic or patent knotting. Thoroughly cleanse the house, removing the loose bark from the Vines, but not peeling, scraping, and scrubbing them so as to injure the living bark. Wash them with a solution of caustic soda and pearlash, 1 oz. each to a gallon and a half of water, apply with a brush, but not too lavishly. Air should be admitted freely in favourable weather, seeking to give the Vines as long and complete rest as possible.

The Kitchen Garden.

Early Vegetables in Frames.

At no season of the year are cold pits and frames more useful than from the present time till the end of May, during which period they are usually filled to their utmost capacity. In establishments where early supplies of vegetables are in demand (and where are they not appreciated?) every inch of pit space that can be spared may be turned to good account for the production of early crops. Potatoes undoubtedly claim first attention, and the present is an excellent time to prepare pits or frames for planting. Brick pits deep enough to admit 2 or 3 feet of fermenting materials are perhaps the best of all structures for the purpose. The materials ought to be thoroughly prepared by frequent turning, in the way so often advocated in the pages of the Journal. If they are beaten down firmly as the work of filling proceeds violent heat and great subsidence will be avoided. A 6-inch layer of soil in the first instance suffices, if the Potatoes are planted upon it and then covered with an additional 2 inches of soil. If the surface of the bed after planting is a foot from the glass at the back of the pit and 9 inches at the front, there will usually be enough space for the development of top growth after the bed has sunk. All Potatoes planted in frames ought first to be sprouted in pots or boxes, in order to forward them as much as possible. Various practices are followed in regard to the distances the tubers are placed apart. Some cultivators arrange the rows a foot apart and the sets 7 inches asunder, but in the confined space of a pit I have come to the conclusion that the heaviest weight per square yard can be obtained by planting 9 inches apart each way.

In regard to varieties Sutton's A1, Sharpe's Early Six Weeks, and Improved Ashleaf are all early and good in quality. Sharpe's Victor, though very early, is in some soils so deficient in quality that it can scarcely be recommended for pit culture. When the tops are 3 or 4 inches in height they should be earthed up almost to the points. The earthing in pit culture of course means covering the whole of the space with the requisite thickness of soil. In March we frequently get severe frosts, and watchfulness is then necessary in regard to covering the frames at night; the sides of the pit as well as the glass often need covering at such times. During bright weather the frames ought to be ventilated freely during the middle of the day and closed early in the afternoon when frost is apprehended. It is usually necessary to water once or twice, the last application being given two or three weeks before the Potatoes are dry, so as to allow the skins time to set and the tubers to ripen.

Early Carrots to be pulled while quite young are always highly prized; for producing such seed should be sown in frames during January, on hotbeds prepared as advised for Potatoes. The row may be arranged 8 inches apart, and if the seedlings are thinned to an inch asunder the remainder may be gradually thinned for use as they advance in size. Another sowing made on a warm border in February will provide a succession of Carrots for pulling young. Sutton's Early Gem and Early Nantes are excellent varieties for the above purposes.

Carrots do not grow very quickly, and thus in the case of sowings made in pits an opportunity occurs of raising early Radishes too. If a little seed is scattered broadcast over the bed the crop becomes large enough to clear by the time the Carrots are growing freely. Early Lettuce may also be raised in the same way, or by sowing in drills between the Carrots. Those with only a limited amount of pit space must often resort to ingenious methods to turn such space to the best advantage, and the intelligent cultivator will be able to arrange many combinations of double cropping on the lines above indicated.

When space can be spared in deep brick or rough wooden pits it is an excellent plan to grow in them a few rows of Peas to provide very early supplies. The seeds may be sown in the pits, or, better still, in pots placed in vineries or Peach houses (where a gentle heat is kept up), and, when 2 or 3 inches in height, planted in the pits. In either case the rows should be about 18 inches apart. Good varieties for the purpose are American Wonder, English Wonder, Veitch's Chelsea Gem, and Carter's Daisy; all of which grow to a height of from 12 to 15 inches, but although so short I have always found it an advantage to support them with short sticks. When they are growing freely, if plentifully supplied with liquid manure it is surprising what fine crops may be obtained in due time.

Fine crops of dwarf Beans may also be obtained by sowing seeds in cold pits, but when sown before the middle of March it is necessary

to have fermenting material beneath to provide against injury from frost in the early stages. Three inches apart is a suitable distance to leave the plants if the rows are 18 inches apart. Plenty of water during the growing season when the weather is bright is necessary to insure good results and keep the plants free from red spider. Osborn's Forcing and Ne Plus Ultra are excellent varieties to grow.—H. D.



* All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Leaf Shedding of Hollies (T. P.).—The leaves are cast, as a rule, in the third year, and in some cases the trees retain the old foliage for a longer time, the retention depending in a great measure on the maturity of the growths and the vigorous character of the plants. The trees that were cut very hard in last spring are not likely to lose any of their leaves until the third year or the season after next, though a droughty period this season may cause some of them to fall from the lower part of last year's wood.

Transplanting Clematis (R. J. E.).—Under ordinary circumstances a Clematis planted in front of a Jasmine would impoverish the soil and check the growth of the latter; but in your case a check is evidently needed, and you may carry out your plan. It is for you to consider, however, whether the Clematis will not grow higher than you wish, and, in popular parlance, "smother" a portion of the Jasmine, though this may, to some extent at least, be prevented, if that is your wish. It could be safely transplanted now on a mild dry day, but first dig out some of the old soil near the Jasmine, 18 inches square and deep, filling with fresh soil of a loamy nature, with a little leaf mould and wood ashes mixed therewith, if you have any. Secure all the roots possible in digging up the plants, and if a little soil can be secured adhering to the roots all the better. Plant quickly, placing some light and not too wet soil in contact with the roots, which should be covered 4 inches deep, pressing the soil down moderately firm; then spread a layer 3 inches thick of light manure or cocoa-nut fibre refuse on the surface. Cut this season's shoot back to the lowest good stems, and afford a little protection to the plant during a term of severe frost that may possibly occur. Should this set in before planting wait till the first fine weather in February; indeed this might possibly be the safest plan under any circumstances, as no one knows what kind of weather is in store. Cutting some of the roots of the Jasmine will do it good.

Cyclamen persicum not Throwing up the Flowers (Zambesi).—There does not appear to have been anything amiss with the treatment, the seedlings coming from a well-known firm, and potted into 3-inch pots early last spring, from which 500 plants were shifted into 5 and 6-inch pots, and now "they are all nice healthy clean plants, but there is no show of bloom in the house, because only two or three blooms at a time come up and develop. By the time they are over another two or three come, and so on, although the corms are literally packed with flower buds, and on most of the plants are one or two big leaves, while the others are much smaller." Such is a very accurate description of not an uncommon state of affairs in *Cyclamen persicum* culture, which frequently arises from the plants not being encouraged sufficiently during the period of making their growth preparatory to flowering, the foliage being uneven and comparatively small, hence not capable of elaborating matter, and the amount stored is relatively meagre, the flower buds in consequence not starting simultaneously, so as to produce a good display of bloom at one time. When the plants are given a light airy place near the glass, shading in bright weather only, applying water liberally, and syringing on fine afternoons to keep the plants clean and encourage growth, they make a sturdy and thoroughly solidified formation of foliage and buds, and given a short period of rest start into bloom with a slight increase of warmth and genial atmospheric conditions. What there may be defective in the atmospheric circumstances does not occur to us, as clearly what is suitable for the development of a few should be equally so for many flowers on a plant. Possibly the burning of the soil, to get rid of eelworm and wireworm, has rendered the compost relatively poor in available constituents, and the growth of the plants has been indifferent in consequence. A different result would most likely have been attained had the plants been supplied with liquid manure during the growing season, or occasional top-dressings of fertiliser been applied. To help the plants now, apply a weak solution of a general fertiliser, such as those advertised.

Dwarf Lobelias (*Tyro*).—If you have a good stock of old plants—these having been kept with a view to obtaining cuttings, or, better still, divisions—keep them in an intermediate temperature. Exposing them to high temperatures, and fire heat in particular, causes the young growths to harden and commence flowering, and to become, therefore, unfit for propagating purposes. Succulent tops root very quickly in heat, and in their turn give cuttings. The best plants, however, can be obtained by dividing old plants freely when they are emitting roots above the soil.

Amaryllises from Seed (*F. W. W.*).—The seeds should be sown in light sandy soil and placed in a temperature between 60° and 70°, where, if the seed is good, germination will commence in about a fortnight. The plants will flower the second or third year, but they do not reach their best condition until about the fourth year, when, if they have been well grown, the bulbs will be strong. The number of good varieties obtainable from seed depends upon the quality of the strain. If the seeds have been gathered from carefully hybridised flowers of the best types in cultivation, three-fourths of the seedlings may be expected to be fairly meritorious, and some will probably excel their parents in size or colour of flower.

Microlepia hirta cristata (*New Reader*).—This is one of the best Ferns provided it is not grown in too warm a temperature, when it soon becomes a prey to scale. In the conservatory it does well, and in baskets develops into beautiful specimens. Plants that have been in a temperature of 45° to 50° will soon commence rapid growth again if started in a little higher temperature. This variety does not like starving at its roots, as, being a strong grower, it has a tendency to go back if very much root-bound. If larger plants are needed directly signs of movement are visible those in 5 and 6-inch pots may be placed into larger. To have a stock of good plants in small pots some of the largest with plenty of crowns may be cut closely over, the crowns divided and dibbled thickly into a box. They soon start into growth in brisk heat, when they can be potted singly and hardened to an intermediate temperature. This Fern does well in vineries throughout the growing season.

Growing for Market (*S. B.*).—Your capital necessitates beginning in a small way. For the £100 you may possibly secure a house of 100 feet length and 20 feet width duly heated for Tomato cultivation, the structure being wholly of wood and glass construction, but upon this point you should consult a horticultural builder, even if you undertook to erect the structure yourself. The land nearest the town would be most suitable, and the rent not high for a period of twenty years, though somewhat high for half that time, and the purchase money, £400 per acre, not excessive for the longer term, as possibly the land would have gone up in value, if not from a horticultural standpoint, for building purposes. The other land at £200 per acre appears, however, to us more to the purpose, though open to the south-west and north-west winds, as shelter of a remunerative nature could possibly be provided in the shape of the hardier fruit trees, such as Damsons, and for such purposes as the cultivation of hardy plants, such as Dahlias, Asters, also Strawberries, Raspberries, and vegetables, would probably be the better of the two positions, the rental, we presume, not being more than £2 per acre, and held on lease for a period of not less than ten years, the option of purchase holding good at £200 per acre. Being near the town it would be an advantage, especially if you intend to go in for jobbing, this, in some cases, being lucrative, particularly where building is carried on rather extensively. It is not so much the price of the land as its quality and position for producing the desired articles and facilitating their disposal. It is useless entering on such enterprises without business capacity, as otherwise the active part in the growing and selling counts for very little. With sound knowledge and keen judgment we do not see why you should not obtain a fair living, the "helpmeet" not being depressed, but of a willing helpful temperament.

Names of Fruits.—*Notice.*—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruits, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruit or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. The practice of pinning numbers to the eyes of the fruit tends to destroy one of the most characteristic features and increases the difficulty of identification. When Plums are sent to be named young wood of the trees should accompany them. Leaves of the trees are necessary with Peaches and Nectarines, with information as to whether the flowers are large or small. (*D. S.*).—1, Queen Caroline; 2, Annie Elizabeth; 3, Golden Reinette; 4, Hereford-

shire Beefing. (*H. E.*).—1, Gloucestershire Costard; 2, Bess Pool; 3, Bramley's Seedling. (*H. H. R.*).—1, Bramley's Seedling; 2, Roundway Magnum Bonum; 3, Knight's Monarch; 4, Easter Beurré. (*A. B. C.*).—Easter Beurré. (*J. D.*).—1, Bergamotte Esperen; 2, Maréchal de Cour; 3, Winter Nelis; 4 resembles Spencer's Favourite.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (*H. H.*).—1, *Pteris cretica*; 2, *P. serrulata cristata*; 3, *P. cretica albo-lineata*; 4, *Aspidium falcatum*; 5, probably a variety of *Aspidium angulare*, but the specimen is not sufficiently complete for positive determination; 6, *Asplenium bulbiferum*. (*A. P. P.*).—1, *Cypripedium venustum*; 2, *C. insigne*; 3, a fine dark form of *Laelia autumnalis*; it closely resembles, but is not identical with, the variety *atro-rubens*. (*L. J.*).—1, *Dieffenbachia picta*; 2, *Asplenium biforme*; 3, *Adiantum cuneatum grandiceps*.

Covent Garden Market.—January 16th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, table, $\frac{1}{2}$ bush. ...	2	0 to 4	6	Oranges, case	6 0 to 150
„ cooking, bush. ...	2	6	7 0	Pears, crate	3 0 7 0
„ Californian, case ...	7	6	9 6	„ stewing, case of	
Chestnuts, bag, from ...	5	0	15 0	72 to 120	4 6 6 6
Cobnuts, doz. lb., best ...	4	0	5 0	„ Californian, case	15 0 18 0
Grapes, black	0	6	2 6	„ $\frac{1}{2}$ case	4 0 9 0
„ white, per lb. ...	1	6	5 0	Pines, St. Michael's, each	3 0 6 0
Lemons, case	9	0	16 0		

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.		
Artichokes, green, doz. ...	2	6 to 4	0	Mushrooms, forced, lb. ...	0 8 to 0 9		
„ Jerusalem, sieve	1	6	0 0	Mustard and Cress, pnnt.	0 2	0 0	
Asparagus (Sprue Grass)	0	6	0 8	Onions, Dutch, bag ...	3	6	0 0
„ Paris Green ...	4	0	5 0	„ English, cwt. ...	5	0	0 0
Beans, French, per lb. ...	0	5	0 0	Parsley, doz. bnchs. ...	2	0	0 0
„ Jersey, per lb. ...	1	6	2 0	Potatoes, cwt.	3	0	7 0
Beet, red, doz.	0	6	0 0	Rhubarb, doz.	1	0	1 3
Brussels Sprouts, sieve...	0	9	1 6	Savoys, tally	2	0	3 0
Cabbages, tally	3	0	5 0	Scotch Kale, per bushel...	0	9	1 0
Carrots, doz. bnch....	2	0	3 0	Seakale, best, doz.	15	0	18 0
Cauliflowers, doz.	1	6	3 0	„ 2nd, doz.	6	0	8 0
Celery, bundle	1	0	0 0	Shallots, lb.	0	2	0 3
Cucumbers, doz.	12	0	18 0	Spinach, bush.	2	6	3 6
Endive, score	1	6	0 0	Tomatoes, English, lb. ...	0	4	0 7
Herbs, bunch	0	2	0 0	Turnips, doz.	2	0	3 0
Leeks, bunch	0	1½	0 0	Turnip tops	0	9	1 0
Lettuce, doz. French ...	0	8	1 6				

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Asparagus, Fern, bunch	1 6	to 2 6	Lilac, white, bunch, ...	4 0	to 6 0
Carnations, 12 blooms ...	1 0	3 0	Lily of the Valley, 12 bun.	12 0	18 0
Cattleyas, doz....	10 0	18 0	Maidenhair Fern, dozen		
Chrysanthemums, dozen			bunches ...	4 0	8 0
blooms ...	1 0	3 0	Marguerites, doz. bnchs.	2 0	4 0
Daffodils, doz....	12 0	18 0	„ Yellow, doz. bnchs.	2 0	4 0
Eucharis, doz. ...	4 0	6 0	Mimosas, bnch. ...	1 0	1 6
Gardenias, doz. ...	3 0	5 0	Odontoglossums ...	6 0	8 0
Geranium, scarlet, doz.			Poinsettias, doz. blooms.	8 0	12 0
bunches ...	12 0	18 0	Roses (indoor), doz. ...	2 0	4 0
Hyacinths, doz. ...	4 0	8 0	„ Safrano, doz. ...	1 6	2 0
Lilium lancifolium album	3 0	5 0	„ Tea, white, doz. ...	1 0	3 0
„ „ rubrum	3 0	5 0	„ Yellow, doz. (Perles)	2 0	4 0
„ various ...	4 0	8 0	Smilax, bunch ...	3 0	5 0

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acers, doz.	12	0 to 24	0	Foliage plants, var., each	1 0 to 5 0
Arbor Vitæ, var., doz.	6	0	36 0	Geraniums, scarlet, doz.	6 0 10 0
Aspidistra, doz.	18	0	36 0	„ pink, doz.	8 0 10 0
Aspidistra, specimen	15	0	20 0	Hydrangeas, white, each	2 6 5 0
Azaleas, various, each	2	6	5 0	„ pink, doz.	12 0 15 6
Boronias, doz.	20	0	24 0	„ paniculata, each	1 0 3 0
Cannas, doz.	18	0	0 0	Lilium Harrisii, doz.	8 0 18 0
Crotons, doz.	18	0	30 0	Lycopodiums, doz.	3 0 6 0
Dracæna, var., doz.	12	0	30 0	Marguerite Daisy, doz.	8 0 10 0
Dracæna, viridis, doz.	9	0	18 0	Mignonette, doz.	8 0 12 0
Erica, various, doz.	8	0	18 0	Myrtles, doz.	6 0 9 0
Euonymus, var., doz.	6	0	18 0	Palms, in var., each	1 0 15 0
Evergreens, var., doz.	4	0	18 0	„ specimens	21 0 63 0
Ferns, var., doz.	4	0	18 0	Roses, doz.	6 0 18 0
„ small, 100	4	0	8 0	Stocks, doz.	8 0 12 0
Ficus elastica, each	1	6	7 6		



The Proper Housing of Live Stock.

THE buildings of the farm, their suitability for the holding and general condition, have more to do with making success or failure than probably any other portion of the farmer's stock in trade, and it seldom happens that we hear a farmer declare that he has more of such accommodation than he needs. Bricks and mortar are such an expensive luxury nowadays, that the cutting up of large farms into smaller and more easily let ones is often prevented by the great expenditure of capital which the landlord would have to incur in providing the necessary farmsteads.

Experiments have lately been conducted in Scotland by Professor Wright and Dr. Paterson to test the economic value of housing sheep. The system of housing prevails very largely in France, but little in this country; we might almost say never, if prize sheep be left out of the calculation. The sheep being a hardy animal, and one which does well and shows a fair profit without the expense of coddling treatment, we hardly think that money will be found by either landlords or tenants for such a purpose except in isolated cases, but it would be interesting if close record of results in such cases could be kept, so as to endorse or otherwise the fair amount of success which attended the Scottish trials.

Instead of considering the housing of sheep much still remains to be done on many farms before the horses and cattle can be expected to keep profitably healthy. Stables are too often found with such bad roofs that in wet weather the water drips on the poor animals' backs as they are tied to their mangers; others are so arranged that the horses stand in a constant draught, and coming sweating into such a death trap, as they must frequently do, it is a wonder that they stand it as well as they do. Other stables have the doorways too low, or are themselves so low that the beams of the roof are within easy reach of the horses' heads. Is it any wonder that under such conditions cases of poll-evil should be frequently occurring?

Then, again, there is the drainage, which is very often defective. The paving of what may have been and otherwise is a most suitable stable gets worn into holes by the stamping of the animals' feet, the result being the imperfect disposal of the urine, which, instead of passing down the gutter into the sewer, soaks into the floor and creates a most unpleasant and unhealthy atmosphere, bad alike for both the breathing and visual organs of the horse. Another serious defect in farm stables is a very common one—i.e., double standings, or rather wide standings, each occupied by two horses. The system is owing in a large measure to the desire to economise space, for a stable which will accommodate twelve horses in double stalls will not comfortably hold more than eight or at most nine in single ones. But the economy is a delusive one, for we have not only had personal experience of the evils of the system, but have known many instances where farmers have been driven by serious accidents and resulting loss amongst their horses to alter their stabling accommodation from double to single stalls.

Another important point is ventilation, which must be provided without the creation of draughts. Apertures in the form of chimneys placed in the ridge of the roof will provide the best of ventilation. The question of light, also, is not to be passed over lightly. (No pun!) We believe in the admission of as much sunlight into stables as we should like to see in our own houses, and glazed windows are equally necessary in both cases. Where the old-fashioned sliding windows are in vogue, too often to let in light means to introduce draught, therefore the window remains closed, and the stable dark. We must remember that sunshine means life and health.

As regards the winter housing of cattle, although matters have much improved during the last twenty years, owing to the greater importance attached to meat-producing animals, much remains to be done. Covered yards are now no great novelty, but we still see constantly the huge old-fashioned open yards with the smallest possible amount of shedding, the bottoms well dished so as to hold as much muck as possible, in dry cold weather dreary wastes, and in watery times very sloughs of despond. How can food be economically consumed under such conditions? Cattle are used as machines for converting food into a more saleable commodity, and the machinery being of a delicate nature it must be treated with care, or the object aimed at will be missed, and loss instead of gain be the result.

We do not think that any open yard should contain more than

eight head of stock. Our own experience has been strongly in favour of small yards. Certainly where there is no, or insufficient, box or stall accommodation, and cattle have to be fed in the yards, those in the smaller yards always do much the best, and we cannot see why there should not be the same difference in the case of young and growing or breeding stock. There can be no doubt that sheep do better when folded in small numbers, and the same rule should apply to cattle, and we are confident that it does. We have seen several instances where much has been gained by the subdivision of big yards, both covered and open. To divide the latter boards should be used so as to make as many sunny and sheltered corners as possible. If tarred annually such a board will last for many years.

As may be gathered from previous remarks, we do not believe in bedded ponds as suitable lair for cattle. Whatever the yards may be, large or small, they must be well drained, and if a large tank be provided for the drainage to flow into all the better, especially if the soil of the farm be of a dry nature.

The cow house must be roomy and well ventilated, but free from draughts, and the formation of the floor and drainage thereof are equally important with those of the horse stable. A good and constant supply of pure water is indispensable, and no cow house is complete without its yard, into which the cows may be turned for exercise for longer or shorter periods, as the weather varies from warm to cold. The yard should be well open to the sun, and the animals should have the benefit of as much of his rays as can be managed.

Piggeries are not so important, but though the pig is at home amongst dirt it does not follow that he would not thrive better amidst cleaner surroundings. That is so, and piggeries should be both warm and well drained. For feeding pigs light is rather a disadvantage, but for sows and stores an open run with light and fresh air is necessary. In conclusion, we may emphasise the fact that the secret of success in the housing of stock lies in proper sanitation.

Work on the Home Farm.

At last we have the desired spell of winter, if it only lasts, of which we are very doubtful, for as we write the sky has the appearance of more snow, and the barometer is falling. Never, except in the harvest season, have we seen such unanimity of work as there is amongst farmers now. The muck cart is the only implement of husbandry in use if we except the Turnip cutter, which is never idle in winter.

As we have remarked on previous occasions, it is not advisable to mix horse manure with that of other animals, for the rapid heating engendered by it is calculated to dissipate to a large extent the ammonia contained in the other manure. On a holding with both strong and light land we should think the more economical way to be to cart the manure from the horse stable and yard directly upon the strong land, spreading it as carted, instead of putting it into a hill. The cattle and pig manure may be led into a heap, ready for application to the lighter soils when required.

Since writing a commendation of hen manure mixed with superphosphate as a manure for Mangold, we find that, through the formation of a syndicate, supers have been raised in price, 50s. per ton being now the retail price to the farmer. We are advised that a further rise may follow, so it might be wise if opportunity should offer to purchase at once and for early delivery, for superphosphate improves in condition with keeping, and loses nothing in quality. The carting from the station also may be done whilst the frost lasts.

We are getting in a fresh supply of coals, which still keep their high value, 24s. 6d. per ton, and not forty miles from a colliery. Pigs have been rather profitable this season so far, but steaming Potatoes is expensive at these prices for fuel, and we fancy that if a strict account were kept we should find that more coals had been used for this purpose than for threshing; 5 cwt. is almost sufficient for the latter on one of these short days, and the wheelbarrow seems to be constantly on the move with coal for the steamhouse.

Sheep are doing well, and Turnips are no worse for the moderate frost we have had. They have never been really hard yet, and ewes can cut their own food with ease and comfort, nevertheless a little extra dry food must be given, scarce and expensive as it is. Malt culms are excellent, also dried grains, unless the latter have arsenic in them, but perhaps a little would be useful as a tonic.

New Agricultural Holdings Act.—A useful, if modest, measure is the new Agricultural Holdings Act, which adds to the number of improvements for which a farmer can claim compensation at the end of his tenancy. Most of these improvements are intelligible only to persons who are learned in the matter of manures, and sixteen of them, it may be noticed, must be made with the consent of the landlord before the tenant can obtain any compensation. Perhaps the chief merit of the Act is that it simplifies the whole procedure for the assessment of compensation by providing that the landlord and tenant, when unable to agree as to the amount to which the latter is entitled, may refer the question to a single arbitrator, whose decision, except in rare instances, will be final.

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Journal of Horticulture.

THURSDAY, JANUARY 24, 1901.

The Passing of a Great Age.

THREE-AND-A-HALF years ago the business of the nation was suspended, London held countless visitors from every land, and the English race in remote corners of the world, from New Zealand to the Yukon, and from the Gold Coast to Hong Kong, were celebrating the Diamond Jubilee of its Queen. At the time of this episode in history it was the good fortune of the *Journal of Horticulture* to command a view of the route followed by Her Majesty in her approach from St. Clements Dunes to the ascent towards St. Paul's Cathedral at Ludgate Hill. Looking down from the upper windows the quaint old thoroughfare of Fleet Street displayed itself for half a mile in a gentle curve as an avenue of multitudinous people defined by two long lines of soldiery, whilst amid a delirium of many-coloured bunting waving in the summer sun, from every one of five thousand windows peered forth tens of thousands of expectant faces.

After hours of waiting, at last heralded by distant strains of music, there appeared upon the verge of the western perspective the vanguard of the imperial escort. Then, endued with all the pomp and circumstance of war and glittering in the sunlight, came on in interminable succession the representatives of the various arms of the national defence. There marched the Highlanders, there marched the linesmen, here rumbled past the Royal Artillery, and then the sailor lads tripped along with their Nordenfelts, while volunteers and detachments of the foot guards, commingled with cavalry, succeeded each other in bewildering alternation, amid the crashing of instruments, the clamour of people, and the clangour of bells. Little thought we then that many of these noble hearts would within three years be sleeping the last sleep of the brave at Belmont, Ladysmith, or the Modder River, dying in the practice of the first of virtues—the love of their motherland.

During **FIFTY-TWO YEARS** the "*JOURNAL OF HORTICULTURE*" has been written by Gardeners for Gardeners, and in its principles, its practice, and its price it still remains the same. One alteration is perhaps, however, necessary. Our modern methods of production have rendered the price old-fashioned, and hence in order to meet the wishes of the present generation of Gardeners the "*JOURNAL OF HORTICULTURE*" will hereafter be sold for **TWOPENCE** instead of Threepence.



But as the gaze was becoming almost satiated by the variety of the spectacle, a new element of interest stirred enthusiasm, for slightly preceding the Diplomatic Corps came the victor of Candahar, since the victor of Pretoria, than whom no one since the days of the Great Duke has received such honour. Behind Lord Roberts the gorgeousness of the scene may be said to have culminated, for none who saw it will ever forget the dazzling and kaleidoscoping grouping of the foreign representatives, including the Hungarian, the Turkish, the Slavonian, the Oriental, and those numerous Indian potentates the tributaries of the Empress-Queen, drawn hither to her island home in the desire to do her honour.

Yet magnificent as all had hitherto been it was merely introductory to what was now approaching. In an open barouche, soberly attired, and holding a black-and-white parasol, appeared a little venerable lady sitting with three other younger ladies rather more stylishly dressed than herself. That was the Empress-Queen, that was the woman towards whom every one of fifty millions of hearts was that day leaping, and to whom more than two hundred millions of heads were bowing throughout the scope of her illimitable dominions. There sat the mother and representative of our imperial race, for whom ten million swords were ready to leap from their scabbards. Never, since the English people saluted Elizabeth at Tilbury, and the Hungarian magnates swore to protect their "king," Maria Theresa, against a lawless aggression, had national feeling so concentrated itself upon a woman.

And now she is gone. The severance which every one apprehended more yearly, but never cared to contemplate, has taken place. It has not been granted that Victoria should achieve the sixty-fourth year of her reign; but she has surpassed the record of nearly every monarch. In almost all things her lot and her reign has been "happy and glorious." If we except the lamentably early decease of the Prince Consort, her cup has been full of happiness to overflowing. It is inevitable in so long a life to incur bereavements, and the Queen suffered some; but these served rather to establish a bond of sympathy between herself and her people than to create any keen feelings of mortification. If as an individual her lot was slightly chequered, her career as a ruler was consistently fortunate in war and made glorious by the arts of peace.

When upon the evening of January 22nd, at seven o'clock, the mourning bells tolled forth, we passed insensibly into a new era, for hereafter the name of Victoria will serve to designate a long stage in the course of our national life. Our Royal line has had its unfortunate reigns, such as those of Henry III. and Henry VI., but it boasts of three—those of Elizabeth, George, and Victoria—in which internal prosperity and external expansion have coincided. The figure of the great, lonely Englishwoman, who had Bacon and Shakespeare with their satellites for her subjects, must for ever remain the bright peculiar star of the national imagination. She was environed by foes, and had neither kith nor kin to aid her, but she was the only ruler in Europe who preserved her kingdom from the curse of civil war, and advanced the fortunes of her people over those of other nations by at least one century, for which period bonfires were burnt in her honour.

The grandfather of our lamented Queen was less fortunate than she and Elizabeth. His were times of great glory, a glory, alas! won more in war than in peace; but England never stood more heroically true to herself than when she was fighting France, Spain, Holland, and her own American colonies at the same time, with only one-third of the population they possessed. Surely our forefathers would have made a mere mouthful of the Boers! Then followed the twenty years of war with Revolutionary France, which the Great Duke ended by placing the laurel crown of victory upon the brows of poor King George, who was no longer capable of appreciating it.

Sad was the aftermath of that heroic age, and it lasted until the accession of our late gracious Sovereign. With her came much of peace and the graces which are peculiar to peace. The early married life of the young royal pair, their simplicity, their love of music and Mendelssohn, their encouragement of Sir Joseph Paxton, and their promotion of the Exhibition of 1851, struck a familiar note

in the hearts of the people, and served to make the crown not merely respected, but beloved.

War came and domestic trouble, but this time there were compensations for the monarch. Wealth increased unboundedly, her children grew up, and, impelled by her example, went forth to the great encouragement of the sciences and the modern arts of horticulture and music. The labour of future historians in describing the multifarious activities of the Victorian era will not be light, but when that history comes to be written it will be found that the development of gardening and architecture has left a deeper and more abiding impression upon the character of the age than any other. By them the Victorian age will be known, and it is no small boast that horticulture at least owes much of its encouragement to the gentle influences radiating from the royal circle whose venerable head has at length been called away after the exercise of a long and beneficent authority.

Preservation of Giant Sequoias.

THE destruction of the famous giant trees in California, threatened by the too enterprising lumberman, has been averted by the United States Secretary of the Interior, and the official report, just issued, shows that vigorous action was necessary in their defence. The two groves containing them were in private ownership, and in the spring public feeling was aroused by the news that they had been sold for timber. The loss would have been irreparable. Some of these trees exceed 300 feet in height, and are of great age. They are not, indeed, quite the tallest trees in the world, for they are overtopped by the Eucalyptus of Australia, one of which is said to have exceeded 400 feet. But the number, situation, and botanical interest of the American mammoth trees make it a public duty to preserve them.

They occur in two great groves, situated in Calaveras county. The Northern, or Mammoth Tree Grove, is the smaller one, being about 50 acres in extent. In it are about a hundred of the big trees, ten of them not less than 30 feet in diameter, and seventy from that thickness down to about 15 feet, while they range in height from 250 to 300 feet. The other, or South Park Grove, is some five miles away, and 1000 acres in extent. It contains about the same number of huge trees, some of which are even larger than those in the Northern Grove. Both are practically virgin forests; up to the present time they have escaped from fire, the great destroyer of American woods. A few dead giants lie upon the earth, which in the Northern Grove is covered by a dense underwood; the trees in many places are so near together that their branches touch, and the sun never falls on the ground beneath them. So little have they been disturbed hitherto that deer, bears, and panthers are still found in the reservation.

The surrounding scenery is also fine, for the groves are situated on a tableland, some 6000 feet above sea level, which is backed on the east by a range of granite peaks. Needle-like pinnacles tower up in one part, and in another the level is broken by two striking crags commanding fine views over the San Joaquin Valley, while at Marble Falls a stream plunges over a huge cliff of that rock. The trees themselves have a certain interest apart from their size. Sequoia, also known as Wellingtonia, is a very limited genus, as it includes only two species—one rightly bearing the name of gigantea; the other being the Redwood, *Sequoia sempervirens*, of the Californian forest, which also attains a great size. The latter is the more common, for, notwithstanding the efforts of the lumbermen, it still forms large forests along the coasts, while the other tree is only found here and there on the uplands. These two are the sole survivors of their kindred, which are found far back in the earth's history.

Sequoias were already living when the sands so conspicuous at Redhill and Reigate were deposited, and have existed ever since in one part or another of the world. In the past they had their representatives in Asia, in North America quite as far as Greenland, on the Continent of Europe, and in our own islands, for a fossil Sequoia has been discovered in the lignite beds of Bovey Tracey in Devonshire, and among the basalts of Mull. These two species, now clinging to the Pacific slopes of North America, also go far back in time, and once ranged much more widely. They are venerable, therefore, alike for antiquity and for size. We cannot say whether the irreverent speculator who recently marked them for his own intended to send them to the saw-mill or to compel the State to purchase his acquisition at a fancy price. When approached on the subject he showed no signs of wishing to come to terms; but apparently he had overlooked a Law which, in effect, gives the Government a right of pre-emption where land is required for the public benefit. The report, which closes with the month of June, leaves the story incomplete, but makes it clear that the spoiler's hand has been stayed, that these botanical wonders are now virtually national property, and that, like the Yellowstone Park, they will be henceforth carefully guarded.—("The Standard.")



1837 — THE QUEEN — 1901.

Epacris Culture.

At a time when the rich feast of the Queen of Autumn flowers has gone, considerable forethought is necessary to keep a sufficient quantity of other plants advancing into flower in order to prevent a galaxy of floral splendour being followed by a dearth of flowers. If the convenience at command is commensurate with the requirements of the establishment, with good management the end in view can invariably be attained, but unfortunately these two vital matters—supply and demand—are often altogether disproportionate to each other. It seems to me that the great craze for novelties in plant life is gradually pushing out of our gardens many sterling old plants which ought to be largely grown, especially in those instances where the unfavourable circumstances above indicated are the order of the day. For flowering at Christmas and during succeeding months, what class of plants can be more useful and beautiful than the various species and varieties of *Epacris*? For use as pot plants and for supplying cut flowers, we must describe them as gems indeed.

At no season of the year does the floral decorator find a plethora of flowers borne on long slender stems adapted for giving lightness to arrangements in which bolder flowers are freely used, and I know of but few flowers which serve this purpose better than do some of the strong-growing varieties of *Epacris*. I have still a vivid recollection of a delightful and truly artistic example of dinner-table decoration carried out some years ago, in which long spikes of these old favourites were associated with *Primulas* and a few single *Camellias*, those having rose shades of colour being exclusively used. For lightness and finish in arrangement and skilful blending of the various shades of rose I have seen nothing to surpass it since. It is a pity that plants with such good qualities should be neglected, and I trust this note will have the effect of again installing them in many a garden from which they have vanished.



EPACRIS MINIATA SPLENDENS.

Cool houses lately occupied by *Chrysanthemums* are excellent positions for flowering the plants, and from the time they require protection from frost till such houses are cleared of *Chrysanthemums* they succeed admirably in cold pits so long as the precaution of giving abundance of air on all favourable occasions is taken. Should it be necessary at any time to hasten them into flower, a little heat may be kept in the hot-water pipes constantly, and a fresh, brisk atmosphere maintained by a regular circulation of air except during the prevalence of sharp frosts. With this treatment it will be necessary to damp the floors and stages of the house occasionally, but only when the atmosphere feels uncomfortably dry. This kind of gentle forcing into flower *Epacris* will bear with impunity, but they should not be subjected to a close moist atmosphere at this stage, or the flowers will become pale in colour and wanting in lasting qualities.

When good sized specimens are in flower they are exceedingly effective if dotted about at intervals among the other occupants of the conservatory, and plants in 5 and 6-inch pots will be found invaluable for house decorations. After flowering the erect growing varieties should have the strong shoots pruned hard back, and the plants arranged in a position where they can have a little extra heat and moisture.

I have found the front stage in a vinery, started a few weeks previously, a capital place for them. Gentle syringing ought to be given during bright weather, and the watering be carefully performed, as a sodden state of the soil is fatal to them at this stage when growth has scarcely begun. Any that require potting ought to be done when the young shoots are about half

an inch in length, ample drainage, as a matter of course, being given, and pots two sizes larger generally suffice.

A compost consisting of fibrous peat with a little broken charcoal and a sixth of sharp sand is suitable. This should be rammed very firmly, taking especial care that only a thin layer is added between each ramming. Just enough soil ought to be placed over the old ball to cover the surface, and if this is left level and firm, in my opinion it answers better than having the centre of the ball either slightly higher or lower than the surrounding soil. After potting no watering at the roots will be necessary for a few days, but the syringings will be frequently necessary should the weather prove bright, and shading for a few hours daily will be beneficial. When it is found that water is required it ought to be done through a rose, and be done thoroughly, so as to moisten every particle of the ball.

With this treatment the young shoots will make good progress, and will need a greater amount of air to keep them sturdy. With this object in view, by the end of April they may with advantage be removed to a structure where an ordinary greenhouse treatment is given. At the end of June place them in the open air; the back of a north wall is a capital position. Plunge the pots two-thirds of their depth in ashes or cocoa-nut fibre refuse, pay strict attention to watering, and occasionally give slight applications of Clay's fertiliser. Strong shoots will thus be produced, and if the plants are arranged thinly the wood will become thoroughly ripened without exposure to more sunny positions, as some advocate. By the middle of September all ought to be removed to cool houses or pits, their subsequent treatment having been already detailed. The following are some of the best varieties:—*densiflora*, *Eclipse*, *exoniensis*, *Exquisite*, *hyacinthiflora*, *h. alba*, *h. candidissima*, *elegans*, *miniata splendens*, *rubra superba*, *Vesuvius*, and *Viscountess Hill*.—ERICA.



EPACRIS ELEGANS.

Figs under Glass.

TREES in pots, started in November or at the beginning of December to afford ripe fruit in April, are forming fresh roots abundantly, therefore the bottom heat must be kept steady at 70° to 75°, bringing the fermenting material to the rim of the pots. This will encourage surface roots, and instead of letting these extend over the rims into the fermenting material place turves round the tops of the pots and extending over or down the sides, which will keep the roots near home, and induce a sturdy growth, while the roots can be fed in the turf. To encourage active feeders from the collar fill the hollows formed by the turves with sweet lumpy manure or rough pieces of turf, and sprinkle these occasionally with a little approved chemical fertiliser.

Keep the atmosphere healthfully moist by syringing twice a day and damping as required in dry weather, taking advantage of every gleam of sunshine for raising the heat to 80°, but admit a little air at 70°, increasing it with the temperature, closing at 75°, and so as to 80° or more. In dull weather the temperature should be kept at 60° by night and 65° by day, but 5° more in both cases when the weather is mild, while in cold a few degrees less will be better than more. Rub off superfluous growths, and stop the shoots at about the fourth or fifth good leaf, but trees making sturdy growths will not need stopping, and may produce the finest Figs.

Planted-out trees started at the new year, and having the roots restricted to narrow borders, will require watering, and, if very dry, repeatedly, to bring the soil in a moist condition, especially as the trees are starting into growth, and need water alike for the supply of nutriment and the diffusion of stored matter. The night temperature may be raised to 55°, and 60° to 65° from fire heat in the daytime, with an advance from sun heat to 70° or 75°, but with moderate ventilation. Syringe the trees in the morning and afternoon of bright days, the latter always sufficiently early to allow the trees to become fairly dry before night, and in dull weather omit the afternoon syringing. Weakly trees may have a good supply of liquid manure at a temperature corresponding to the mean of the house, but it must neither be too strong nor excessive in quantity, while it will only make matters worse where the growth is strong. Judicious manurial applications induce active fibrous roots near the surface for appropriating the food supplied.—GROWER.

NOTES & NOTICES

Recent Weather in London.—No great variations in the weather are to be recorded since last Sunday. That day was mild and dull, while almost spring-like conditions prevailed on Monday and Tuesday. Wednesday opened with a sharp white frost.

Death of Mr. Douglas, jun.—Horticulturists will sympathise with Mr. and Mrs. Douglas in the loss of their second son in South Africa. He was killed by a lightning flash on the 10th inst. at Stormberg. Mr. Douglas' elder son has been all through the war, and was one of those shut up in Kimberley. Both brothers were in the Cape Mounted Police.

Mushrooms in January.—"H. E. A." writes to a daily contemporary:—While walking through the grounds of the Dutch Almshouses at Charlton, Kent, on Monday morning I saw the gardener of the establishment pick some Mushrooms from the grass, and on examination they proved to be three fine specimens. Surely this is a most unusual occurrence in January, especially after the recent severe weather.

Gardening Appointments.—Mr. C. Martin, late of Clarence House Gardens, East Cowes, has been appointed horticultural instructor to the Isle of Wight County Council, and commenced his duties on January 1st. Mr. J. Cook, foreman at Presdales, Ware, Herts, has been engaged as head gardener to W. G. Phillips, Esq., Berwick House, Shrewsbury, and enters on his duties January 26th. Mr. C. Russell, late head gardener to R. H. Reade, Esq., Wilmont, Dunmury, Belfast, has been appointed and taken up his duties as gardener to Sir Richard Musgrave, Bart., Tourin, Cappoquin, co. Waterford.

Woolton Horticultural Society.—The second annual meeting of this society was held last week in the Mechanics' Institute, Mr. J. Stoney presiding. The balance-sheet showed a credit of £34 12s. 8d. A notable feature was the large increase in cottage exhibits, and it was announced that a handsome silver challenge cup would be given by Neil Gossage, Esq., for the cottagers' section. The last-named gentleman was appointed treasurer, and Mr. Learoyd secretary. Miss Tate and Miss Brunner received votes of thanks for the good work done on behalf of the society, as did also Miss Manson for the lovely bouquet recently presented to the Lady Mayoress.—R. P. R.

City Gardener for Edinburgh—An Inverness Man.—Mr. John M'Hattie, The Gardens, Lea Park, Milford, Surrey, was appointed head gardener by the Edinburgh Town Council on Jan. 15th. There were 138 applicants for the vacancy. Mr. M'Hattie is forty years of age, and a Scotchman. On leaving school at the age of fifteen he entered the gardens of the Mackintosh of Mackintosh at Moy Hall, Inverness-shire, where he served his apprenticeship under the late Mr. Rhind. Leaving there, he afterwards served in the gardens at Cantray House, Altyre House, Raith House, Fife; Knightshayes Court, Devonshire; Oxenfoord Castle, Dalkeith. Nine years he was head gardener to the Most Noble the Marquis of Lothian at Newbattle Abbey, Dalkeith, and for the last eight years superintendent of his Grace the late Duke of Wellington's gardens, parks, and pleasure grounds at Strathfieldsaye, Hampshire.

Broughty Ferry Horticultural Association.—The opening meeting for session 1901 was held last week, when the president, Mr. William Grant, Fernhall Gardens, occupied the chair. He said that during the century just closed horticulture had made steady and rapid progress. While the culture of plants under glass had developed to an enormous extent, horticulturists looked confidently forward to still greater strides of progress in the future. He then gave an interesting review of the principal changes in the gardening world, with a special reference to the history of the past fifty years. Dundee, he said, was making a bid for botanical gardens; window gardening was in the city encouraged by the Corporation; the School Board vied with the municipal authorities in their interest in floral cultivation; and he ventured to express the hope that Broughty Ferry might not lag behind in these respects.

Royal Horticultural Society.—The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, January 29th, in the Drill Hall, Buckingham Gate, Westminster; 1 to 4 P.M. A lecture on "Some of the Plants Exhibited" will be given by the Rev. Professor G. Henslow, M.A., &c.

Veitch Memorial Fund.—At a meeting of the trustees, held on January 15th, it was decided to place at the disposal of the Glasgow and West of Scotland Horticultural Society two Veitchian medals and two prizes of £5 each, to be competed for at the exhibitions proposed to be held by the society in connection with the Glasgow International Exhibition of 1901. They also decided to place a medal and prize of £5 at the disposal of the Wolverhampton Floral and Cottage Horticultural Society and the Taunton Deane Horticultural Society, to be competed for at their respective summer shows. It was further decided to offer a large Veitchian silver medal to Mr. R. Irwin Lynch, A.L.S., curator of the Cambridge Botanic Garden; and to Mr. W. B. Latham, curator of the Birmingham Botanic Garden, in recognition of the eminent services rendered by them to horticulture.

Chester Paxton Society.—Under the presidency of Mr. Robert Wakefield, Newton Hall, the usual fortnightly meeting was held in the Grosvenor Museum on Saturday, when Mr. W. Neild, F.R.H.S., of Holmes Chapel College, read a paper entitled, "Manures: Organic and Inorganic, Special and General, and their Effects upon Crops." The lecturer, who has had large experience both as practical horticulturist and as a teacher upon the staff of the Cheshire County Council, dealt with his subject in a very practical and exhaustive manner. Much useful information was gained by those present, and Mr. Neild emphasised the fact that to understand thoroughly the nature of soils and manures a knowledge of practical chemistry was a decided advantage. A discussion followed the reading of the paper, and the meeting closed with the usual votes of thanks.

The Devon and Exeter Gardeners' Association.—During the next three months this society will celebrate its spring session in a series of lectures and addresses, of which the following programme indicates the attractive titles:—30th January, by Mr. John Coutts, "Greenhouse Hardwooded Plants;" 13th February, by Mr. W. R. Baker, "The Best Dozen Vegetables for Exhibition;" 27th February, by Mr. F. J. Fletcher, "Hardy Fruit Growing for Devonshire;" 13th March, by Mr. James Mayne, gardener to the Hon. Mark Rolle, Bicton, "Methods of Propagation;" 27th March, by Mr. R. W. Hodder, gardener to Mrs. Trevor-Barclay, Torquay, "Is Gardening a Science?" 10th April, by Mr. G. H. Head, assistant gardener at Poltimore Park, "The Treatment of Cool Orchids."

Liverpool Horticultural Association.—The fourteenth annual dinner was held at the celebrated Bear's Paw Restaurant on Saturday evening, January 19th, Mr. R. Wilson Ker being in the chair, and ably supported by Mr. T. Foster, chairman of the association. Amongst those present were noticed Mr. Herbert, superintendent of the Liverpool Parks; Mr. J. Hathaway, superintendent of the Southport Parks; Mr. J. Guttridge, curator, Wavertree Botanical Gardens; Mr. A. W. Ker, Mr. B. W. Ker, Mr. H. Ranger, Mr. J. Mercer, vice-chairman of the association, and members and representatives of the various horticultural trades in the city and district. The general attendance of members and friends exceeded one hundred. After dinner and the loyal toasts, Mr. Ker commented upon the progress of horticulture during the last century. The seventeenth century was noted for its making of pleasure grounds and the planting of woods. In 1820 the opening up of the colonies brought with it prosperity to gardens. There were then only some twenty thoroughly cultivated greenhouse and other house plants. Then followed the introduction of New Holland plants, Rhododendrons, foliage Palms, and on through Fortune's days to the introduction of his Chrysanthemums and Coniferæ. Then the Orchids made their triumphal entry. Fruits and vegetables were being constantly improved, literature had marvellously increased, and the weekly journals had become indispensable. He urged the claim of the gardening charities, and reviewed a fifty years' improvement in Liverpool's public gardens, and what was interesting to many, stated that at the present time Mr. Herbert, the courteous chief of them, had under his charge forty-five parks, open spaces, and playgrounds, a staff of 170, and new additions pending. Mr. Foster vigorously upheld the good work of the association, and also gave a review of other societies. A capital programme of vocal and instrumental music was given, Mr. R. Pinnington proposing the vote of thanks.

St. John's Horticultural Society, Ipswich.—The annual meeting was held on Wednesday evening in the Schools, Cauldwell Hall Road, Mr. Lewis Smith being in the chair. The balance-sheet, as audited by Rev. W. S. King, was received and adopted. This showed the sum of £10 2s. 6d. in favour of the society. It was decided that in future the gentleman entertaining the society for its annual show should be the president for the year. The vice-presidents were re-elected, as were also Mr. D. Walden as treasurer, and Mr. J. M. Cracknell as secretary. Mr. W. Dale and Mr. N. Howe wished to retire from the committee of management, and Messrs. L. Smith, E. Cox, T. A. Cornish, W. T. Cook, Walter Cook, A. Cudmore, and C. Banyard were re-appointed. It was resolved to appeal for special prizes, and to revise and issue the schedule at an early date.

Grimsby Horticultural Society.—The fortnightly meeting of the Grimsby Horticultural Society was held on January 16th, the subject of the paper by Mr. G. Needham being the "Growing and Forcing of Bulbs." Mr. Needham referred first to the growing of the flowers by the Dutch. Up to the beginning of the last century only single Hyacinths were grown, and the first double varieties had now been lost. Peter Voerhelm, who originated the doubles, raised also the variety called King of Great Britain, which was long sold for £100 sterling, and this was supposed now to be the oldest variety extant. A very large number of both single and double varieties were named and recommended. Tulips were supposed, said Mr. Needham, to have been brought into Europe in 1559, and were cultivated in England in 1577. It was cultivated largely in the Netherlands, and as much as £400 and £500 had been paid for a root. The soil required was much the same as in Hyacinths.

Hessle Gardeners' Society.—Under the presidency of the Rev. A. Wordsworth Savory, the above society held the first of the series of four lectures at the Parish Schoolroom, January 15th. The lectures are to be given by Mr. Gaut, County Council Horticultural Instructor from the Yorkshire College, Leeds. Mr. Gaut proceeded with his subject, entitled "Seeds and Roots of Plants: Their Work, and How to Help Them." After advising everyone to exercise the utmost care in the selection of seeds, which should be obtained from a reliable firm to insure success, he proceeded to give the necessary elements for germination, and reminded his hearers that every seed, no matter how small, contained within its embryo a small plantlet; they should therefore be treated as living plants as soon as they are sown. Mr. Gaut strongly advised that seeds should be sown as near the surface as possible. Careful attention to every detail was essential to success, both for seed-sowing and seed-saving. Mr. Gaut's remarks on watering proved most instructive to young gardeners. His experience with liquid manure was, that it is always best to err on the safe side by giving a weak application judiciously and regularly at a season when plants are active. A profitable discussion followed the lecture. Mr. Gaut replied to each one individually. Hearty votes of thanks were accorded the lecturer and chairman, which terminated a highly instructive and interesting evening.—J. F. D., *Yorks.*

Croydon Horticultural Mutual Improvement Society.—The first annual meeting of the society was held at the Sunflower Temperance Hotel, George Street, on Tuesday, January 15th. Over eighty members were present. The committee presented their report and balance-sheet for the past year. These were confirmed and adopted. Fifteen meetings have been held during the year, at which lectures have been given and papers read on various branches of horticulture, all of which have been of a high standard of excellence, and the discussions which followed have proved both profitable and instructive to those present. The average attendance at the meetings has been forty-five. The members then proceeded to the election of officers and committee for the present year:—President, Frank Lloyd, Esq., Coombe House; vice-presidents, F. W. Burbidge, M.A. Trin. Coll. Botanic Gardens, Dublin; C. H. Walker, Esq., Falkland Park; T. English, Addington Park. On the proposition of the chairman several suggestions were made by members for the future benefit of the society. The secretary advocated that all possible encouragement should be given to the younger gardeners, with the result that six members offered prizes for essays on horticultural subjects. It was proposed by Mr. Boshier, seconded by Mr. E. Kromer, and carried, "That a dinner and social evening should be held in February." Votes of thanks to the officers and committee brought a very enthusiastic meeting to a close.—J. GREGORY.

Cornwall Daffodil and Spring Flower Society.—The committee of this society is doing valuable service in securing exhibition of the lovely spring flora of Cornwall, and in illustrating the geniality of the climate. Her Royal Highness the Duchess of Cornwall has most graciously given her name as Patroness of the society. The fourth annual show was most successful. The exhibits were very numerous, and the entries for competition were larger than in the previous show.

Birmingham Amateur Gardeners' Association.—Report of the committee for last year was presented at the eighth annual meeting held on Thursday. In presenting their eighth annual report, the committee were pleased to record that the influx of new members continues satisfactory. The attendance at the three shows has been well up to the average. The papers and lectures given at the meetings have been of a good average character, and although not as numerous as in previous years, they have fulfilled an important item in the year's doings. Particular mention should be made of the paper on "Mushrooms," Mr. C. H. Herbert; and the lectures on "Gooseberries and Currants," Mr. J. Udale, and "Autumn Flowers," Mr. W. B. Child. The committee desired to record their thanks to the donors of special prizes—namely, Messrs. J. S. Cornwell, C. Daniel, G. F. Kent, A. Muddyman, G. Pressly, W. A. Sarsons, A. Stanford, Herbert Stone, F.L.S., R. Sydenham, W. Sydenham, W. H. Twist, and J. S. Walford.

Royal Meteorological Society.—The annual general meeting of this society was held on Wednesday evening, the 16th inst., at the Institution of Civil Engineers, Great George Street, Westminster, the president, Dr. C. Theodore Williams, in the chair. The secretary read the report of the council, which showed the society to be in a satisfactory condition, there being an increase of fifty-five in the number of Fellows over those of the previous year. Reference was made to the celebration of the society's jubilee on April 3rd and 4th last, and also to the death of Mr. G. J. Symons, F.R.S., who had amongst other things bequeathed to the society about 2200 volumes and 4000 pamphlets from his valuable library. Dr. C. Theodore Williams delivered the presidential address, taking for his subject "The Climate of Norway and its Factors." He considered that its meteorology should prove an attractive study for the society, as having much in common with that of our country, both the Norwegian and the British shores being influenced by the same Gulf Stream, and having their winters and summers tempered by the same equalising agency. The factors which influenced the climate were—1, The insular character of the country; 2, the distribution of the mountain ranges, which explains to a large extent the rainfall; 3, the waters of the ocean, which from a variety of circumstances come into close connection with much of the country and thus temper extremes of climate; and, 4, the sun, which in this latitude remains in the summer long above the horizon, and in the winter long below it. The address was illustrated by a large number of lantern slides of Norwegian scenery, embracing mountains, glaciers, fjords, &c. The election of officers and council for the ensuing year then took place. Mr. W. H. Dines, B.A., being appointed president, and Dr. C. Theodore Williams treasurer.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
January.										
Sunday ..13	S.E.	deg. 42.1	deg. 40.5	deg. 43.6	deg. 37.2	ins. —	deg. 41.1	deg. 42.6	deg. 46.0	deg. 37.0
Monday..14	E.S.E.	35.2	33.7	46.4	29.9	—	40.5	43.0	45.9	20.2
Tuesday 15	E.S.E.	33.6	32.1	39.9	31.8	—	38.5	42.6	45.9	19.1
Wed'sday 16	E.S.E.	37.8	36.0	43.6	32.4	0.02	37.4	42.0	45.7	21.1
Thursday 17	S.S.E.	46.7	45.2	48.4	37.5	—	39.8	43.0	45.5	31.6
Friday .. 18	S.S.E.	37.7	37.4	49.1	35.9	—	40.3	42.3	45.5	29.4
Saturday 19	S.S.E.	43.7	42.1	49.0	37.9	0.14	40.8	42.5	45.5	30.6
MEANS ..		39.5	38.1	46.4	34.7	Total 0.16	39.8	42.6	45.7	27.0

There was a sharp burst of frost in the early part of the week followed by milder weather and a cold drizzly rain on the 19th.



Book Gardeners.

AFTER waiting patiently for many weeks the perennial appeal for ignorance at last appears on page 33 to cheer those of us who do not want to improve ourselves; who do not want to study the principles of our profession; who do not want any tests; and, in fact, who do not want to be bothered with anything beyond the three R's. That illustration of the far-sighted duke is most refreshing, and must convince all of us that the time has arrived for the foundation of a strong "Society for the Suppression of Knowledge among Gardeners." A charter should be applied for granting power (a) To confer degrees of R.R.R. on its members; (b) to abolish all scientific education and all examinations; (c) to secure priority of employment for its members. It would assist the society materially if powers could be obtained to punish all disturbers of our peace, such as promoters of examinations and of education generally, and especially the irrepressible Scotsman who will persist in improving himself while young with a view to sweeping off all the plums of our profession throughout the world; we stand no chance against him now. All head gardeners of fair education should be dismissed summarily, and so cause healthy promotion for us. Any gardeners who have been so misguided as to obtain the R.H.S. certificates might be punished by fine for a third class; lengthened imprisonment for a second class; but nothing less than penal servitude for life for a first-class certificate. That dreadful person who advertised the other day for a gardener holding the R.H.S. certificate should suffer the extreme penalty of the law, together with "J. S." who on page 41 has the temerity to thank "An Old Boy" for trying to help young ones. With a powerful chartered society of our own we could sleep in peace, resting serenely calm in the consciousness that, like horticultural Joshuas, we had done our best to make the sun of knowledge stay in its course, and should be proud of our signature—R. R. R.

Gardeners' Education.

ALTHOUGH it is not possible for any liberal-minded man to coincide with "A Working Gardener" when he asserts that a knowledge of the three R's is enough for any intending gardener, yet there is absolute truth in his assertion that books or theoretical knowledge is not required for or estimated in making appointments to head gardeners' positions. It is a case of less of what do you know than of what can you do, and the clever grower and good manager of labour and a garden is a long way ahead of one whose theoretical knowledge is great, but whose practical knowledge and adaptability are small.

It is possible were a lady engaging a woman as her head gardener, that she would be less concerned as to her practical knowledge than as to her collegiate courses, and if she had been successful in passing her exams, that would no doubt be highly esteemed. Probably not one lady or gentleman in a thousand puts questions as to collegiate training to a man. They are much more concerned as to his appearance, his demeanour, his integrity, his gardening experience, and the references he brings from previous employers. This may be, of course, intensely disappointing to the collegiate or class student who has passed well, but it is so all the same. Still it would be folly on the part of any young man to ignore the many advantages he will possess when he secures a head charge if he has gone in education very much beyond the three R's.

Most valuable to him will be some knowledge of botany, and especially of plant or vegetable physiology. So also of plant constituents, and the suitable foods, called manures, to provide for the sustenance of plant life; also a knowledge of drawing and plan preparation of ground work is most useful. Drawing especially furnishes admirable training to the eye, which is greatly needed in gardening. Some little mathematical knowledge is useful; so, too, is a little of science as applied to the heating of glass houses.

These are only some of the things a gardener, or an intending one, of which he may well get knowledge. Of course much of this knowledge can be picked up as the years roll on, but the young man who has acquired sound, systematic knowledge early in life is in the best position to apply such knowledge usefully and practically as he goes along. Even sitting for an examination and attending classes must do a youth great good, even if an employer should not appraise such labours one iota in a salary. The experience is helpful in life, and the knowledge thus obtained is also both advantageous and pleasurable. Young men should use their youth and spare time well, even if no real pecuniary benefit arises, for the knowledge thus acquired will certainly aid them in the performance of their duties and greatly assist to render life happier and pleasanter.—A. D.

Old Hotbed Manure.

"A. D." writes, on page 55, strongly on the virtues possessed by the above. I wonder how many gardeners put it to the uses claimed by your correspondent? Paying a friendly visit to a neighbouring gardener recently I found his men busy wheeling out an old hotbed to a vacant quarter of the kitchen garden. Being both readers of the Journal, the conversation turned to the virtues possessed by the manure under notice. My friend's opinion was not a high one, as he made the remark that he would gladly give "A. D.," or anyone else, four loads in exchange for one good load of cow manure.

As a rule, much of the solid matter has been extracted for Mushroom growing, thus leaving the bulk of the material, when made into a hotbed, a mixture of decaying straw and whatever leaves are obtainable. After doing duty as a hotbed the manure is frequently put to one of the uses "A. D." mentions—that of top-dressing, or rather, as a thick mulch to rows of Peas, Dwarf and Runner Beans, and other plants, which in a hot season, and growing on sandy shallow soils, are benefited by a mulch of any sort. Growers of giant Onions generally prefer Mushroom refuse to the rougher material, the former being of a closer texture, and certainly much tidier in appearance. The use of this mulch is not so much for its fertile value, as to conserve the moisture in the ground during the drying droughts which we usually experience in July and August. In gardens where the soil is of a strong nature, and much trenching is annually carried out, quantities of hotbed manure usually find a final resting place at the bottom of a 2-foot trench. As an aid to successful Chrysanthemum growing, it is questionable if many gardeners include this manure in their final potting soil.—T. H. B.

Decorative Chrysanthemums.

I WAS pleased to read "H. R.'s" courteous reply (page 33) to my criticism of his article on "Decorative Chrysanthemums." But I would like to ask "H. R." why Chrysanthemum blooms of exhibition standard are a luxury any more than bush-grown sorts, for in 95 per cent. of cases are they not grown for and used amidst luxurious surroundings? Are not all plants, fruits, and vegetables which are cultivated under glass luxuries? They certainly are not necessities of everyday life. "H. R." states that large blooms are wasteful, because after being cut the foliage quickly withers, and although the flowers remain fresh they are comparatively worthless, owing to the want of foliage. This must be very vexing, but I am glad it is not my experience, for I find no difficulty in keeping the foliage quite fresh equally as long as the bloom continues in a presentable condition. I always make a point of splitting the stem in an upward direction for a distance of at least 3 inches before arranging them in vases containing water. If the water is changed every alternate day, and half an inch cut off each of the stems, it is surprising what a long time the foliage and blooms remain fresh. Vases that hold a fair amount of water should be chosen if possible.

If the decorations of small, hot rooms have to be catered for during the season of the autumn queen it would be necessary to cut the blooms with short stems, or the flowers will soon collapse; this applies to all varieties of Chrysanthemums. I should like "H. R." to fully understand that I recognise that bush-grown Chrysanthemums are indispensable in every garden, both for early, midseason, and late flowering, when suitable varieties are chosen. The value of the variety Princess Victoria, when grown in this form, cannot be overestimated for late flowering. I have now, January 12th, several plants in bloom, just at their best.—A. JEFFERIES, Moor Hall Gardens, Essex.

Manures and Leguminous Plants.

YOUR correspondent, "Practitioner," at page 490 (last vol.), refuses to accept my statement that the action of farmyard manure as plant food is slow, and says that with the exception of manures in liquid form no manure is more active or speedily utilised by plants than is good animal—i.e., farmyard manure.

In reply I wish to state that the nitrogen, or available plant food of farmyard manure, exists in very different conditions. That due to the urine of the animals will be most rapidly available, corresponding as it does to good liquid manure; that in the finely comminuted matter in the faeces will be much more slowly available, and that in the litter still more slowly; in fact its availability will extend over several years—hence the small proportion that is at once effective, and the very large amount that accumulates within the soil to be gradually nitrified and made soluble.

As an illustration showing the slow action of farmyard manure in comparison with chemical artificial manures I may quote an experiment at Rothamsted with Potatoes. These experiments were commenced in the year 1876 on specially exhausted land, and have been continued up to the present time. One portion of the land has been without manure during the whole of the period, other portions have received the same description of manures year after year. In the first year (1876) the

unmanured plot yielded $77\frac{1}{4}$ cwts. of Potatoes per acre, the plot receiving 14 tons of farmyard manure produced $85\frac{1}{4}$ cwts. per acre, an increase of 8 cwts. only, while the plot receiving a complete artificial manure, containing both available nitrogen and available minerals, gave $175\frac{7}{8}$ cwts. per acre, a gain of $98\frac{5}{8}$ cwts. over the plot without manure, and an increase of $90\frac{5}{8}$ cwts. over the plot receiving farmyard manure. This is undoubtedly a striking example of the slow action of farmyard manure in comparison with artificial ingredients. In the second year of the experiments (1877) the 14 tons of farmyard manure, combined with the residue left in the soil from the previous year, some of which had by this time become available, gave an increase of $57\frac{1}{2}$ cwts. of Potatoes per acre over the plot which received no manure, while the complete artificial fertiliser gave an increase of $93\frac{1}{4}$ cwts. This shows that the accumulated available plant food due to the previous manurial application was less in the case of the readily soluble artificials than it was in the case of the slowly acting dung. Other illustrations might be given if space permitted.

In the second place, your correspondent says that experience shows that nitrogenously manured soils give better crops of Peas and Beans than unmanured ground, although scientists insist on the uselessness of giving nitrogen to leguminous plants.

I stated in my article (page 457) that every species of plant, however small, required nitrogen in some form for its perfect development, accordingly Beans and Peas cannot be produced without this element, which they must obtain either from the soil, the atmosphere, or from the two combined. When nitrogen exists in the soil in sufficient amount the leguminous plants assimilate a smaller proportion from the atmosphere.

The reason Peas, Beans, and other leguminous plants do not flourish on an unmanured and poor soil is that an insufficient supply of available mineral ingredients, especially of potash and lime, exists for the plants' use. To quote another Rothamsted experiment, this time from an ordinary four-course rotation of crops—viz., roots, Barley, Clover, Wheat. This experiment commenced in 1848, and is still in progress. One portion of the field has received no manure during the whole of this period; a second portion has received a mineral manure, but no nitrogen; a third portion has received a complete manure, supplying both minerals and nitrogen. These manures are applied for the roots only, the following crops have to rely on the residue left in the soil by the root crops. In 1892 the crop was Red Clover, and the following results were obtained as hay per acre:—Without manure, 17 cwt.; with mineral manure, 65 cwt.; with the complete manure, 84 cwt.

Here, then, we see that the leguminous crop, Clover, was able to assimilate but little atmospheric nitrogen on the unmanured and exhausted soil because it lacked the necessary soluble mineral food to allow of the working of the appropriate organisms; while the application of mineral fertilisers, but without any nitrogen, yielded an increase of 48 cwt. of Clover hay per acre over the plot without manure, that is to say, there was fixation of free nitrogen under the influence of lower organisms either within the soil itself or in symbiotic growth with the Clover plant when the necessary mineral food was present.

The experimental evidence at Rothamsted goes to show that the proportion of nitrogen due to fixation from the atmosphere will be less in the richer soils and greater in the soils that are poor in combined nitrogen, and which are open and porous.

Scientists do not insist on the uselessness of giving nitrogenous manures to leguminous plants, but it is very questionable whether it is economical to apply heavy dressings of such manures to Beans, Peas, and other leguminous plants which possess such a grand power of obtaining this expensive element (nitrogen) free of cost to the gardener, provided he supplies them with the cheaper materials of potash, lime, and phosphoric acid.—J. J. WILLIS, *Harpenden*.

Horticultural Catalogues.

AT this season of the year the sumptuously produced catalogues, as well as the modest lists of seeds, roots, and plants, are being circulated throughout the length and breadth of the land, so that owners and cultivators of every degree may "read, mark, learn, and inwardly digest" the well set out contents. A perusal of these prints leads us to infer that the taste for cultivating plants, flowers, and vegetables is on the increase, or it would not be a profitable undertaking to issue such vast numbers as in the aggregate there must be circulated. The cost of printing and posting in many cases is very great. The catalogues are intended to be attractive and instructive in character, though the descriptions of the quality and productiveness of certain things may sometimes be overdrawn. Upon the whole, however, the information is to be relied upon.

The illustrations of the modern catalogues since the general adoption of photography in embellishing the pages are more in accord with actual reality. The highly coloured, exaggerated illustrations have

had their day, and the catalogue compilers are to be commended on a stricter adherence to Nature by recording the achievements of cultivators just as they find them. In a catalogue photograph, say of Potatoes, everyone knows that though the best samples may have been brought together for the purposes of the picture there is really nothing beyond the cultivator's ability. The photo gives an excellent idea of the size, shape, and general appearance as far as is possible with any picture, and this is all that can be expected. It is the same with other things.

Seedsmen's catalogues are the medium by which the general mass of cultivators are kept up to date in the best varieties of everything. The importance of consulting them is apparent, as the majority of the leading lists contain much interesting and valuable information which may be pondered over during the long winter evenings ready for adoption when a convenient time allows.

The various lists are issued early so that they may be perused at leisure. It is, however, to be feared that, attractive though they may be, the fate of being forgotten for many weeks lies before them. This is very often greatly to the seedsman's disadvantage, not because he may miss an order, but owing to it coming in the height of the busy season. When this does happen the sender also experiences a disadvantage, because orders being treated in rotation, as they should be, a period of waiting must follow. Seeds, dry roots, and bulbs do not spoil by keeping a few weeks in early spring, if due precautions are taken to insure them being dry and cool. Therefore early orders should be the rule and not the exception. The seedsman appreciates it. The cultivator appreciates it after he has experienced the chagrin and annoyance of having everything ready for the seeds, but unfortunately they are lying in the seedsman's safe-keeping when they ought to be in his own drawers, where he could put his hands upon them at the exact moment required.

There is another matter which is often overlooked. The proper making up of a seed order is no light business; it requires a considerable amount of judgment and care in order to do it economically and obtain everything in due proportion to the demands of the garden. All gardens are different in their requirements. The facilities for raising, growing, and attention to be given vary, as well as soils and situations. The uses to be made of crops, profitable or otherwise, must be considered; in fact the garden must be studied, its capabilities gauged as regards fertility and bringing crops to perfection. Nothing should be grown that is not of some use, practical or ornamental. Make the garden useful as well as pleasurable, and do not overcrowd. The cultivator is able to make the most of things when he can begin early in the season sowing and planting at the right time. A stress of work is thereby avoided to some extent when a number of things call for immediate attention.

As a general rule the high quality of seeds is unquestioned, but when hasty and indifferent sowing is resorted to, because the operation has been driven late, failures sometimes result. Then the seed and the seedsman may be condemned, whereas the fault lies in bad practice brought about by mismanagement, such as burying the seeds too deeply, non-pulverisation of the soil, or neglect in protecting the seeds when committed to the soil from depredations by various enemies.

These are some of the thoughts which occur in perusing the season's catalogues. They are storehouses of things required for the garden. Those who do not feel capable of making up their own seed order can utilise the collections which are offered. Though the quantities of some items may be too great and others too small, and some things not required at all, these collections serve to show the amateur what are the main or principal crops, and may prove a valuable lesson in the requirements of a garden. The lists of novelties is an attractive feature, which may be misleading, inducing cultivators to try them instead of the reliable standard varieties. A few should be tried every season if practicable, not, however, discarding the old ones until they can be superseded with safety.

In sowing grass seeds it is economical as well as satisfactory to employ the special mixtures of grasses for the purpose. The lists of shading and protecting materials always include something specially adapted to the needs of every garden.

A good seed list is not considered complete without a great variety of garden requisites and implements are offered. As something is always breaking, wearing or rusting out, a complete overhauling of tools and necessaries should be made, so that missing or broken articles may be ordered and replaced. Insecticides, manures, and fertilisers are indispensable in a well kept garden, hence a stock of each should be procured along with other requisites.

The discarded catalogues of previous years should not be destroyed. If they are of no further use to the possessor give them to someone else, to whom they may be of interest and value. Perhaps they will be useful to them as books of reference; indeed, it is never known when an old catalogue may be found serviceable for the moment, verifying the information afterwards by a standard work of reference.—E. D. S.

Early Tomatoes.

WHERE Tomatoes are held in high esteem—and they are annually gaining favour—they, like most other choice vegetables, are much valued early in the season. Last year we cut fruit from our spring-raised plants in April, and by the end of May we had abundance. To have Tomato plants in fruit in April no time should now be allowed to pass before sowing the seeds. These are best placed in 3-inch pots. After filling the desired number of these with any rich soil two seeds should be placed on the surface in each, and slightly covered. If the pots can then be plunged in a gentle bottom heat the plants will appear all the quicker, and then they should not be placed far from the glass, as drawn spindly plants are never so good as short-jointed robust ones, and all depends on the position in which they are grown. As soon as the plants are 2 or 3 inches high

clusters of flowers will appear every few inches after this. Numbers of fruits will form on each of these, and by the time the plants are at the top of the stakes, eighteen, twenty or more fruits will be formed on each. This number is a good crop to begin with, and the point should be taken from each plant at this height, all side shoots removed, and little or no growth be allowed to be made until the fruits are swelling. At this time plenty of water and liquid manure must be given, and a side growth may be allowed to form occasionally to produce a bunch of bloom and fruit in succession.

As they grow quickly and may be trained any way, or cut-in to any extent without injury, it is an easy matter to cut all barren wood out and only leave that which will bear fruit. When the first leading growth has fruited and become exhausted, a fresh one may be taken up from the bottom and be treated in the same way as the first until it comes into bearing, when the old one can be cut away. When this is done a good top-dressing should be given to assist the young growth. There is no secret in fruiting Tomatoes early, nor does it



TOMATO HACKWOOD PARK.

the weaker of the two should be drawn out. If plants are scarce repot this, but do not neglect the one left in the pot, as it will make the better and earlier-fruited plant.

When it is from 6 to 8 inches high it should be transferred to the fruiting pot. This may be either 8-inch or 10-inch size. For small corners the former may be used; where space is abundant the larger size is better. The fruiting pots must be well drained, and the soil employed must be good. Loam and cow manure are suitable, and these should be used in a rather dry state. The soil must be rendered firm, or the roots soon take possession of it, and they are liable to receive a check at any time from deficient supplies of water. They do not need bottom heat after being placed in the fruiting pots; but if they can be arranged on a shelf in an early vinery or plant stove where the heat is between 60° and 70°, they will grow rapidly, and soon make fine plants.

When they are about 1 foot high a stake 3 feet long is placed to each and the stems are tied to this. When the plants are grown robustly they will show bloom by the time they are a foot high, and

require a great amount of skill, if they are only grown in pots in a warm position near the glass and never allowed to carry more wood than is bearing the fruit.—J. M.

Tomato Hackwood Park.

THE accompanying photograph shows a row of Tomato Hackwood Park, numbering seventy plants. The seeds were sown under glass in the usual way in February, and planted out at the end of May on the lower edge of a Vine border. The fruits varied in weight, but averaged 10 to 12 ozs. each, the total weight of fruit on the row, 85 feet long, being 4½ cwt. I think it is due to our local seedsmen, Mr. Birt, to mention his name in connection with so prolific a strain—the whole were produced from a threepenny packet of seed. I think your readers will agree with me that with a small amount of trouble this fruit could be grown in such quantity and at such a price as to oust the foreign produce from the English market.—EDWIN ALLEN, *The Gardens, Maindee Park, Newport, Mon.*



Origin of Several Varieties of Moss Roses.

At the unique National Rose Show, held in the Botanical Gardens, Edgbaston, in July last, several varieties of Moss Roses (*Rosa muscosa*) called for a share of attention from those interested in this section. It has, therefore, occurred to me that the subjoined extract from that interesting old journal, "The Horticultural Cabinet and Florist's Magazine" of 1851, might prove interesting to some readers of the *Journal of Horticulture*. The paper in question was contributed by Mr. H. Shailer, Chapel Nursery, Battersea Fields, London, and which I quote verbatim.

"On the first introduction of the old red Moss in or about the year 1735, it was sent over with some Orange trees from the Italian States to Mr. Wrench, then a nurseryman and gardener at Broom House Fulham, the same being now in the occupation of the descendants of that family, the Messrs. Fitch, extensive market gardeners, &c. It remained in that family nearly twenty years without being much noticed or circulated, until a nurseryman named Grey of the Fulham Nursery, now Messrs. Osborn's, brought it into note. The first production of the white Moss Rose, which took place in the year 1788, was from a sucker or underground shoot. My father, Henry Shailer, nurseryman, of Little Chelsea, an extensive grower of Moss Roses, perceiving it to be a *lusus naturæ* from a stool of the red Moss, cut it off, and budded it on the White Provence, or Rose La Blanche Unique. The buds flowered the following season a pale blush. He budded them again the next season, when the flowers came much whiter. It was thus figured in 'Andrew's Rosary' under the name of Shailer's White Moss. He then sold it out, the first plants to Lord Kimbolton, then to the Marquis of Blandford, Lady de Clifford, the Duke of Gloucester, &c., at 5 guineas per plant. He continued to sell at that price for three years. He then entered into a contract with those highly respectable and extensive nurserymen, Messrs. Lee & Kennedy of Hammersmith, they taking as many plants as he could grow for three years at 20s. per plant, binding him not to sell to anyone else under 42s. per plant.

"After cutting down the shoots which produced the white Moss the plant threw up two weak shoots, which he budded from; they flowered the second season from the buds, and that was the birth of the striped Moss Rose, a most beautiful and delicate variety, but when grown very strong apt to go back to the original parent. The production of the single Moss Rose, 1807, was a sport of Nature. My father sent some plants of Moss Roses to a nurseryman named Essex at Colchester, and on receipt of a letter from that person I went with my father to see the plant when it was in bloom. I took some cuttings away with me to bud, and the following autumn fetched the original plant to our nursery at Little Chelsea, from whence we sent the first plant out at 5s. The old scarlet Moss Rose, which is a semi-double, first flowered in 1808, on a plant given by my father to his brother, F. Shailer, of Cook's Ground and Queen's Elm, Chelsea.

"The first production of the Moss de Meux was from a sport of the old De Meux, in the neighbourhood of Bristol, but brought into a high state of perfection by Messrs. Lee of Hammersmith. The Sage-leaf Moss Rose I must claim myself. It was a sport of Nature. I discovered it on a Sunday afternoon in the month of June, 1813. I sold the whole stock to Messrs. Lee of Hammersmith. It has a delicate shell-like form, and is a beautiful blush; now nearly extinct. On the first known production of La Blanche Unique or the white Provence it was discovered by Mr. Daniel Grimwood, nurseryman, of Little Chelsea. He was on a journey of business in the county of Norfolk, in the month of July, 1775, when riding very leisurely along the road he perceived a Rose of great whiteness in a mill garden; he alighted, and on close inspection discovered it to be a Provence Rose. He sought an interview with the inmate of the mill, who was an elderly female, and begged a flower, which was instantly given him, and in return he gave her a guinea. In cutting off the flower he cut three buds. He went to the first inn, packed it up, and sent it direct to my father, who was then his foreman at his nursery Little Chelsea, requesting him to bud it, which he did, and two of the buds grew.

"In the following autumn he went down to the same place, and for five guineas brought the whole stock away. He then made an arrangement with my father to propagate it, allowing him 5s. per plant for three years. At the expiration of that time he sold it out at 21s. per plant, my father's share amounting to £300. Mr. Grimwood sent the old lady at the mill a superb silver tankard and presents to the amount of £60. The Shailer's Provence, or *Rosea gracilis*, so named by Messrs. Lee, was raised from seeds of the Spineless or Virgin's Rose, sown by myself in 1799, and flowered in 1802. We raised numerous varieties from seed up to 1816, and generally sold them to Messrs. Lee, who sent them out under their own naming."—WILLIAM GARDINER, *Harbournne, Birmingham*.

Ardlui.

WITHIN easy reach of the Irish metropolis, yet in close contact with rugged Nature, the gardens and grounds of Ardlui are situated. This, the residence of G. Mitchell, Esq., is about three miles from the rising town of Blackrock, and something more from the city proper. My visit was a fortunate one, for the grounds, early in July, looked charming. Roses had scented their environs with perfume, whilst the trees had donned their best attire. The interest was much increased by the guidance of Mr. W. Baker, the efficient gardener. Though the place has no pretensions to size, the skill of man has formed within its narrow compass a charming sylvan retreat, whilst some of the Conifers would be reckoned to rank amongst the finest specimens in the Emerald Isle.

The houses, situated close to the roadside, are hidden from the grounds. There is one span-roofed structure, the remainder forming a lean-to range. They contained fine collections of Crotons, ranging in size from table plants to handsome specimens; Palms, notably Kentias, with Phoenix in lesser quantity; also Ferns, Anthuriums, Eucharis, which are in strong request by the number present, and Hibiscus. Amongst the latter Mr. Baker pointed out a seedling of his own; it was a neat plant with pure white flowers, the base of each segment on the inside having a dark scarlet spot. Streptocarpuses were in abundance, as were Zonal Pelargoniums. Orchids, though not numerous, include Cypripediums, Oncidium, and Cattleyas of the best known types. Carnations are well grown, the old Germania being a favourite. Tomatoes, Melons, and Peaches were in excellent health and carrying quantities of fruit. Adjoining the houses is the kitchen garden, in which Strawberries were splendid, as also were Currants. The whole of this quarter was surrounded by a wall of Sweet Peas, and as the ground sloped the sheet of bloom looked particularly effective. Several hundred Chrysanthemums are grown, and as they flanked a walk between the herbaceous borders, they looked remarkably well. A fine bed of Dahlias showed a mass of foliage, the Cactus types being mostly in favour. Skirting some beds of hardy flowers the lawn came into full view. It is dotted with Conifers, but a handsome Quince soon attracted attention, its silvery hued foliage forming a pretty object; it is thrown well into relief by the dense mass of shrubberies on both sides.

Close to the house stands a grand row of *Araucaria imbricata*; they were planted very closely, and the lower branches were lying on the ground. In the orchard Apples predominate, standards of Bramley's Seedling, Warner's King being mostly in evidence. On the walls Pears, Cherries, and Peaches were trained; they were in the picture of health, and were laden with fruit. On one side of the rosery Lilacs were planted, and on the other trees in variety, each being edged with hardy flowers. The Roses were planted in beds. Both the Teas and the Hybrid Perpetuals were represented by some of the newest as well as the oldest varieties. The plants were one mass of flower. In close proximity the ancient tower, with the gay rosery and the sombre tint of the neighbouring trees formed a striking picture. From its roof one gets a pleasant glimpse of the suburbs of the metropolis. From this point to the houses there is an avenue of over a mile; it formed a unique picture, as on one side was a sheet of bloom, the whole being planted with Monthly Roses, over which waved the darker foliage of trees; at intervals there are dense masses of shrubberies.

Adjoining a miniature lake is the arbour house, which is covered with Polyantha and Ayrshire Roses. In close proximity are several Scotch Firs about 60 feet high, and Woodbines were growing upon them; their pendulous foliage would easily reach close on 45 feet, and in the distance is a splendid *Cryptomeria japonica*; it is upwards of 90 feet high, and over 10 feet round at the stem. The lowest branches lie on the ground. Its full beauty is somewhat detracted from by belts of Rhododendrons, which are hiding its finest branches. Cedars are represented by several giant specimens. Before drawing this description to a close I desire to note an artificial glen in which Ferns luxuriate, Aspleniums being in the greatest quantity; the overhanging foliage of a Walnut lends a charm. We bade Mr. Baker a reluctant farewell, after thanking him for his kindness, and congratulating him on the excellent condition of his charge.—A. O'NEILL.



The Wonders of Peat.—Herr Zschörner, of Vienna, has been experimenting with peat for twelve years past, and, according to a writer in the "Leisure Hour," has shown very conclusively that it has many astonishing qualities. In Ireland, in particular, this intelligence should be welcomed. A building has been exhibited in which everything, from the carpet on the floor to the curtains on the windows and the paper on the walls, was made from peat. The fibres of the remains of the reeds and grasses of which peat is composed have, of course, their original physical and chemical characters changed; but the fibrous structure remains intact, and the fibres themselves are very durable, elastic, and non-conductors of heat. Fabrics woven from them are found to have the toughness of linen with the warmth of wool. There is no textile fabric that cannot be woven from these fibres. Blankets and other coverings used for horses and cattle have been found in use to excel in warmth and cleanliness. Paper of several qualities has been made, and the uses to which peat fibre has already been applied indicate possibilities that may render the peat bogs of Ireland a valuable addition to the resources of that country.

Chionias.—These are very showy plants and are very useful for house or table decoration in late summer and early autumn. At Kew three species are in cultivation, all South African plants and all requiring cool treatment. *C. floribunda*, a dwarf plant forming a dense mass of wiry growths clothed with small bright green leaves. The flowers are half an inch across, pink, and produced singly from the axils of the leaves. It grows well in a mixture of peat, leaf mould and loam, with a good proportion of sand added. *C. linoides*, known in the trade as *C. ixifera* is the handsomest of the three. It has a sturdy, upright habit, bears small, linear, glaucous leaves, and each shoot is terminated with pink flowers with prominent yellow anthers. When at its best the whole plant looks like a loose, elegant bouquet of flowers. To grow it well it must be given a mixture of peat and sand and potted firmly. *C. peduncularis* makes a nice little plant if kept well stopped, otherwise it soon becomes straggling. It differs from the other two by having larger leaves and flowers, the leaves being $2\frac{1}{2}$ inches long by three-quarters of an inch wide, and the flowers nearly $1\frac{1}{2}$ inch across, with peduncles 2 inches long. The flowers are reddish purple with deep yellow anthers. It requires a mixture of loam, leaf mould, and sand. All may be readily grown from cuttings.—W. D.

Transplanting Onions.—By this term I mean the transplanting of Onion plants from boxes when the plants have been raised under glass, both into other boxes thinly, and from the seed or other boxes into the open ground. One of the most successful of Onion growers, and he constantly obtains bulbs of giant size, and from 3 lbs. upwards in weight, not only sows his seed in shallow boxes, but he transfers the plants thinly into other rather less shallow boxes when they are some 3 inches in height, and from these latter boxes lifts them with good balls of soil and roots attached and puts them out into the open ground, specially trenched and manured for the purpose, about the third week in April. But, in another direction, what seems to be appreciable success is obtained by sowing the seed in boxes 5 inches deep which have been filled with good soil. In these boxes the plants remain until they are planted out, when they are lifted and put out carefully, but the roots are devoid of soil. Now the natural assumption would be that the plants put out with good balls of soil attached to the undisturbed roots would make quickest growth and have much the soonest start. So much seems to be certain, as by that way some of the heaviest and finest bulbs grown in the country are produced. The grower in question holds that his put-out plants have fully a month's start over those not so treated. The matter is well worth testing by experiment. Of course, bulbs weighing 2 lbs. each as produced by the one transplanting seem very fine, but they do not compare with others of 3 lbs. weight produced by the double-planting method. It would be interesting were some half-dozen of our chief giant Onion producers to give their general methods in relation to transplanting.—A. D.

Inheritance of Accidental Characters.—Mr. W. C. Steele, of Switzerland, Florida, relates that he cross-fertilised a number of flowers of the white and crimson Cypress Vine. To effectually pollinise the flowers, the corollas had to be slit on one side. The seedling plants not only had an intermediate mixture of tints between white and pink, but also had the corollas slit as they had been slit by manipulation in the case of the parents. Mr. Steele is one of the most intelligent horticultural botanists, and can scarcely be mistaken. But the result is of such bearing on weighty questions, that it would be desirable to have many experiments of the same character.—("Meehan's Monthly.")

Jottings on Pines.—I would again refer to the freshness and high quality of British grown as compared with imported Pine Apples, and of the necessity of starting without delay. The plants which completed their growth early last autumn and have been treated so as to push fruit early in the year, should now be doing so, and the fruit will ripen at a time when it is most in request. Take every advantage therefore of suitable weather to afford increased heat during the day. Allow the temperature to rise to 80° before giving air, then with moderate ventilation let it rise to 85° or 90° , closing at 85° , the night temperature being gradually raised to 70° and 75° by day by artificial means, unless the weather be dull and cold, when 5° less will be more suitable. The moisture will need to be increased correspondingly with the temperature. Keep the bottom heat steady at 85° to 90° for Queens, other varieties about 5° less. Look the plants over once a week for watering, and when they need it afford a supply of weak liquid manure. Ordinary fruiting plants should have a temperature at night of 60° to 65° , 65° by day in dull weather and when cold, 70° to 75° in mild with a little sun, ventilating at 75° , allowing an advance to 80° with sun, at which close the house, sprinkling the paths and walls at the same time.—PRACTICE.

Winter Flowering Begonias.—Apparently the hybrid Begonias will soon be as largely grown and as showy in winter as the pseudo-bulbous section have been for years in summer. Those who have seen the fine exhibits of these plants at recent London shows must have noticed how bright and beautiful they are. Many must have thought a year or two back that the acme of perfection had been reached in the now ubiquitous *B. Gloire de Lorraine*. But equally decorative, and far more telling in colour, are some of Messrs. Veitch's new hybrids that Mr. Heal has been showing us of late. Mrs. Heal, for instance, shown at the first November meeting at the Drill Hall, is a grand thing, free in growth and flowering, and in colour extremely bright and showy, while the fine bank of another new hybrid on the 20th was equally showy. And there is just a possibility that the trend in favour of these splendid hybrids may lead to some of the old winter flowering species that have been elbowed out by Chrysanthemums coming to the front again. It is rank heresy, of course, in some quarters to say a word against the autumn queen, but with the advent of such fine plants as these, noted gardeners, who have to keep up a varied as well as a bright display, will not be quite so dependent upon her as they have fancied themselves of late years.—H. R.

Palm Culture in Belgium.—Palm propagating and Palm growing as practised in Belgium is simplicity itself. The soil is sandy, and one can dig very deeply without encountering even a pebble, and this natural soil is what is used in Palm culture. The seeds are planted at a depth of about 2 inches under the stages in moderately warm greenhouses, and an occasional watering is all the attention they receive until they have pushed through and the seed leaf is formed. They are then unearthed with a broad piece of iron, potted, and placed in a house heavily shaded by painting the glass, and the addition of a shading of thin 1 inch strips of wood about one-quarter of an inch apart. They are then encouraged to rapid growth by warmth and frequent syringing, and are repotted as they attain size. The heavy shading is not only a safeguard from injury by the sun, but insures a dark green colour on the foliage. In the cases of some of the more tender kinds more careful attention than above indicated is required. *Cocos Weddelliana*, for instance, because of its sensitive tap root, is started in flats, the seeds being laid upon the surface of the soil and covered with sphagnum. As soon as they begin to germinate they are potted into "long toms," in which they are grown. Large sized plants of this species are seldom seen. The largest I have noted in quantity were at the nursery of Mr. Thos. Rochford, Broxbourne, England. These were from $2\frac{1}{2}$ to 3 feet in height, and remarkably handsome.—R. S. EDGAR (in "American Gardening.")

Late Dessert Fruits.

UNDER this heading Mr. Challis contributed a most interesting, and I may say enviable note, on page 539 (last volume), respecting the supply of late dessert fruits he had been enabled to send to table. His note contained matter interesting not only to gardeners, but some others almost entirely dissociated with gardening—namely, the publishers of local weekly periodicals. Fired, no doubt, with the pleasing prospect that Plums, Peaches, and Strawberries were likely to be added in the near future to the Christmas dessert, they were anxious to place the information early before their readers. Mr. Challis' note, culled from the Journal, was published in its entirety, and read, no doubt, by many with eager expectations affecting the future.

The year which closed the nineteenth century was a remarkable one in many respects, and if, as Mr. Challis assumes, it afforded a signal in its closing weeks of what may be expected in the near future—Christmas Peaches grown on British garden walls—then there must be pleasant anticipations in store. There is no limit to the possibilities accruing from the imports from foreign lands; English markets already afford what in the earlier portion of the past century would have been considered impossibilities. The fact, however, must not be overlooked that Britain's climate is a very fickle one, and unless some authority arise that can govern such everyday matters, there is not much hope that is not fraught with occasional "blights."

Mr. Challis gives what is a generous due to the pomologists responsible for the late sorts of fruit available. It would be interesting if Mr. Challis gave the varieties of Peaches gathered so late from the open wall as November 25th, also the Plums and Strawberries, and the aspects on which the Peaches and Plums were grown. Wilton Gardens claim many fames, and the responsible chief has attained to many distinctions, both from scientific and practical points of view. His paragraph—all too short—has, I feel sure, set many minds in agitation, and raised many an enviable thought, when he had been privileged to supply such dessert in late November.

The process of retarding many kinds of flowering plants and roots has wrought wonders in the floral world, and there seems to be no reason to hesitate on the possibilities of fruit retarding. Whether Peaches and Nectarines, Plums or Cherries have been already subjected to this course has not, as far as my knowledge goes, been made public, but I see no reason why pot-grown trees should not be enabled to the process, and by these means extend the season of such fruits farther into the winter.

Not many garden walls are likely to produce Peaches late in November with any degree of certainty. Severe frosts often intervene before that time, and it would need a good covering to render ripe fruit safe against frost, taint, and damage. Very much depends on the garden, the nature of its soil, shelter, and altitude. In one, Sea Eagle and other late autumn fruiters will hold out a supply much later than in another. On a south wall with which I am familiar Sea Eagle and Princess of Wales are finished in early October. The quality of Salway and Golden Eagle grown in a cool Peach case was so poor that orders were given for their supply to be discontinued, and though they may be used in a stewed state, they are very disappointing, especially when temptingly coloured on the dessert table. A woolly Peach pales before a luscious Pear, Doyenné du Comice or Marie Louise for instance. There is, it must be said, an element of ornament about the dessert associated with the autumn shooting parties, and it is in this respect where Peaches of doubtful quality may be permitted. Gardener and host are each the prouder for the acquisition of any out-of-date dish, provided it lends an attraction to the table. The autumn Strawberry, now so fashionable, I was able to produce for one shooting week, and though attractive in colour, of delightful aroma, and of course some novelty, the flavour, because it was less than a "Sir" Joseph, did not call for much praise, even though it attained to the higher and more dignified title—"Saint" Joseph.

The past year, as previously remarked, has been one of many vagaries—some favourable, others the reverse. Its effort to anticipate spring has been ruthlessly suspended with floods and frost. The cold touch experienced even so late as May and June retarded growth of some trees, while the great heat of later summer helped or hindered in other respects. Truly it was a year fraught with many ups and downs from a gardener's point of view, and while the ups may not have escaped depression in some of their many phases, the contrary elements carried some surprises in their train. Mr. Challis must be congratulated on such a splendid extension of the summer fruits, and he certainly would supply interesting reading by stating a few particulars about his treatment of late Peaches and Plums—his aspects, altitude, variety, and mode of protection.—R. A.

Tuberous Begonias for Bedding.

FOR the decoration of the flower beds during the summer months where a mass of colour is required tuberous-rooted Begonias are unrivalled. True, some persons still have a great leaning to "Geraniums," which, given favourable weather, are undoubtedly valuable in the garden, but when we consider that they are, under adverse weather conditions, a failure, and the time and space required to accommodate the plants during the winter and spring, the balance is certainly in favour of the Begonia. No matter whether the weather be continuously wet or dry, tuberous Begonias under proper management appear not to mind in the least.

Although seedlings make a good display the first season if started early, the plants grow larger and give more bloom the second season. Sow the seeds in pans or boxes early in January in a compost of peat, leaf mould, and loam in equal portions, adding silver sand freely. Fill the receptacles to within an inch of the surface, having the soil quite fine on the top; well water the soil at once to dispense with the necessity of giving water in quantity later. Sow the seeds thinly, covering with sand only; place on the top a square of glass, as this will prevent the rapid evaporation of moisture from the soil, covering the glass with moss until the seedlings appear on the surface. Stand the pans or boxes in a moist temperature of not less than 65° or 70°. Directly the plants are large enough to handle prick out the strongest into other pans, encouraging them to grow rapidly yet stockily by affording a position close to the glass. Gradually inure them to cooler quarters until a cold frame is sufficient to harden them preparatory to going to the beds.

In the case of one-year-old tubers, some persons start them into growth in a strong heat, but this I consider an error, as it weakens their after growth. When taking them from the sand in which they were stored during the winter place them in boxes of fairly rich moist soil, giving no water beyond a gentle daily sprinkle for a time. A vinery or Peach house started early in March provides a suitable temperature and the requisite moist atmosphere. When half an inch or so of growth has been made the tubers should be reboxed. Ordinary cutting boxes answer capitally, employing a compost of two parts fibrous loam to one of leaf mould and half-decayed horse droppings, with a handful of finely ground bones. Allow ample space for the full development of the leaves, standing the boxes in the warmest part of the greenhouse until growth is fairly started, when abundance of air should be given to encourage a robust steady growth. For several weeks before planting the lights should be drawn off the frames during the daytime to make the plants thoroughly hardy. Early planting in the beds is important, so as to give the plants a long season of growth, but means should be in readiness to protect them in case of a late spring frost or cold easterly winds, which are at times prevalent in May.

The preparation of the soil in the beds is an important item in the successful culture of tuberous Begonias. A fairly rich soil is a necessity to produce a vigorous growth, without which a quantity of bloom cannot be obtained. Moisture at the roots is essential, but stagnation is harmful. Where the soil is strong and retentive it should be trenched 2 feet deep, breaking up the subsoil below to admit of a free percolation of water from heavy rains. At the bottom of each trench place a layer of long stable manure as a means of improving the soil in the future, and to assist drainage in the top spit add half-rotted stable manure and decayed vegetable refuse freely. Soil of a sandy character should have abundance of cow manure added to it. A little bone dust added will induce a more vigorous growth, and add colour to the leaves as well as lustre to the blooms.

If possible choose showery weather for planting, as the roots more quickly take hold of the new soil. Should the weather be hot and dry at planting time a light shade ought to be provided to prevent the leaves becoming burnt. The most suitable time for planting is a matter for local decision. Some districts are much more subject to late spring frost than others, hence the caution in time of putting out the plants. The middle of May is generally suitable. In planting ample space should be given to each plant to admit of a free development of leaf and blossom. The habit of growth of various strains differs so much that it is difficult to lay down a hard and fast rule. To my mind the soil which is exposed between the plants for some months until the growth of one unites with its neighbour is most objectionable. I strongly advise the use of some low growing foliage plant thereon, not only to hide the soil, but to give enhanced effect to the various colours below. For instance, what a thorough contrast is secured by scarlet Begonias growing above *Antennaria tomentosa* or *Sedum glaucum*. *Herniaria glabra*, *Mesembryanthemum cordifolium variegatum*, *Veronica repens*, or some of the low growing *Alternantheras*.

Tuberous Begonias are moisture-loving plants, and cannot well have too much water at the roots during a spell of dry weather. An occasional soaking of the soil with liquid manure will give a decided fillip to freedom of growth. A washing of the foliage afterwards with

procureable. Some may prefer a mixture, but in any case there is abundance to choose from.

Passing from tuberous Begonias in beds, I might, in conclusion, say how admirably they are adapted for hanging baskets. Those of



TUBEROUS-ROOTED BEGONIAS IN BASKETS.

clear water will remove any stains from the leaves occasioned by the liquid manure. Nowadays, when so much variety in colour can be had in tuberous Begonias, the planter can decide what colours to have in arranging his beds. Almost any one distinct colour in quantity is

a pendulous or drooping habit are the most suitable for this purpose. Those who have such plants growing in pots may transfer them to wire baskets in June, first lining the inside of the baskets with moss, and using a compost of fibrous loam, leaf mould, and sand.—S. P. H.

Gardeners' Royal Benevolent Institution.

Annual General Meeting.

THE annual general meeting of this most admirable charity was held on Tuesday afternoon at Simpson's, Strand, under the presidency of Mr. Harry J. Veitch. The attendance was fairly large, and amongst those present were Dr. Maxwell T. Masters, and Messrs. P. C. M. Veitch, W. Poupart, J. Fraser, G. Wythes, J. Denning, J. Hudson, G. Monro, H. J. Cutbush, T. Swift, A. W. Sutton, Owen Thomas, R. Dean, H. J. Cox, and W. H. White.

Before the formal business commenced Mr. Veitch made an allusion to the serious illness of her Majesty the Queen, who had been a Patron of the Institution since 1851, and proposed that a telegram to H.R.H. the Prince of Wales be sent. There was, of course, no dissent from this, and the following message was despatched:—

To H.R.H. THE PRINCE OF WALES,
Osborne House.

"The subscribers of the Gardeners' Royal Benevolent Institution now assembled for the election of pensioners, desire to express their deepest sympathy with their President, H.R.H. the Prince of Wales, and every member of the Royal Family, in their intense anxiety consequent on the most alarming illness of her Majesty, who has been Patron since 1851 of the Institution.

(Signed) VEITCH, *Chairman*.

This was acknowledged later in the evening by H.R.H. the Prince, and shortly afterwards the melancholy news arrived that Her Majesty had passed to her reward.

Report of the Committee.

In presenting their annual report and statement of accounts, as audited, for the year 1900, the committee have again the privilege of congratulating the members and subscribers on the continued success which has attended the work of the Institution during another year—the last one in the nineteenth century, and the completion of the sixty-first year in the society's history—and they desire to express their thankfulness that the help afforded to the large number of old and worthy people, whose circumstances have compelled them to seek its aid, has been instrumental in providing a much appreciated measure of relief and comfort for them in the evening of their lives, after a service of toil for the pleasures and necessities of others.

At the commencement of the year there were 179 persons—ninety-eight men and eighty-one widows—who were receiving permanent aid of £20 and £16 a year respectively. During the year twenty-one of these pensioners have passed away—fourteen men and seven widows. Of the men five left widows, whose circumstances were of such a nature as to permit the committee placing them at once on the funds at £16 a year in accordance with the rules. Thus at the close of the year they had sixteen vacancies, and they recommend the election of seventeen additional pensioners at the annual meeting and election to be held this day, making the total number of pensioners for life 180—the largest number on the funds of the Institution since it was founded.

With regard to finance, the committee are much gratified to be able to report that, notwithstanding the heavy demands made upon the benevolent public during the past year, the income of the Institution has been well maintained, enabling them to continue and increase their operations without the anxiety which must necessarily occur with diminished funds. For this happy result the committee gratefully offer their sincere thanks to all the friends and supporters of the Institution throughout the country. They would, however, remind their friends of the increased liabilities incurred in adding to the number already on the funds, but they confidently appeal for continued effort on the part of their many friends and supporters, so that the work may be in no wise curtailed.

The committee have much pleasure in stating that the anniversary festival dinner, which was held in May last under the presidency of the Duke of Portland, was a great success. They gratefully acknowledge their deep indebtedness to his Grace for his kindness in presiding, and for his able and effective advocacy of the Institution's claims, which met with so ready and generous a response. In tendering his Grace their very sincere thanks, the committee would desire to thank also all those who, either as stewards, collectors, donors of flowers, or in any other way contributed to the success attained. They would further take this opportunity of expressing their thanks to the honorary secretaries of the several auxiliaries, and to other friends in various parts of the country for their kind services to the Institution, as well as to the horticultural Press for their generous help, gratuitously and ungrudgingly afforded at all times.

The committee are glad to state that the Victorian Era Fund is more than ever a source of invaluable assistance to unsuccessful candidates—who have been subscribers—whilst awaiting election. During the year now closed the sum of £99 has been distributed as follows:—Mrs. Baxter, £5; J. Gibbons, £10; J. Jefferies, £10; G. Marlow, £10; W. Smith, £10; G. Wills, £10; T. Kirkby, £8; Mrs. Hackwell, £8; S. Mills, £8; Mrs. Wighton, £8; Bird Porter, £7; J. Thatcher, £3; W. Gould, £2. And the thankful letters received from the recipients unmistakeably show how much the help was required and with what gratitude it has been received.

The Good Samaritan Fund—established in 1899 for the purpose of dispensing temporary relief in urgent cases of trouble and distress—has enabled the committee to grant gratuities in two cases, and as the fund has been augmented during the past year by £560, and although the interest alone from the fund is available, they are hopeful that they may have the means at their disposal for alleviating, if only temporarily, many sad cases of distress which come before them. They again earnestly commend this fund to those friends who are in a position to afford it their practical sympathy and aid.

In their last report the committee had to record with deep regret the death of the Duke of Westminster, who had been their valued president for many years, and who had always evinced so warm an interest in the affairs of the Institution. They are very gratified to be able now to announce that H.R.H. the Prince of Wales—who since 1871 had been patron of the Institution—has graciously consented to become its president. For this gracious and powerful support to the work the committee are confident every subscriber will join with them in tendering H.R.H. their respectful and grateful thanks. They have also the pleasure to report that H.R.H. the Princess of Wales, and their R.H.'s the Duke and Duchess of York, have been pleased to evince their interest in the work carried on by the Institution by becoming patrons.

Unfortunately the committee have again to deplore the loss of many warm friends and subscribers through death, amongst whom they would mention Mr. John Fraser, formerly for some years a member of the committee; Mr. Philip Crowley, treasurer of the Royal Horticultural Society, and Mr. T. B. Haywood, all of whom for many years generously supported the Institution.

In conclusion the committee make an earnest request for further help, that the progress made by the Institution hitherto may be sustained, and that the income may be enlarged to such an extent as to warrant them in granting assistance to many more applicants upon whom declining years, infirmity, and misfortune have fallen.

DR. BALANCE SHEET, 1900.

To Balance	£980	14	7
„ Amount on deposit	3115	10	0
„ Annual subscriptions	£1526	4	6
„ Donations at, and in consequence of Festival Dinner, including collecting cards	1455	4	6
„ Good Samaritan Fund	560	9	0
„ Return of income tax	33	17	3
„ Advertisements in annual reports	46	15	6
„ Dividends and interest	932	14	8
	4555	5	5
	£8651	10	0

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By Pensions and gratuities	£3062	17	2
„ Expenses of annual meeting and election	12	5	5
„ Secretary's salary	£275	0	0
„ Office assistance	28	5	0
„ Rent, cleaning, firing, and light	89	11	2
	392	16	2
„ Printing, including annual reports, voting papers, appeals, &c.	111	18	0
„ Stationery	17	19	6
„ Festival expenses	£208	6	4
„ Less dinner charges	127	1	0
	81	5	4
„ Advertisement in Fry's Charities	3	3	0
„ Postages, including reports, voting papers, appeals, &c.	51	8	9
„ Travelling expenses	5	9	2
„ Carriage, telegrams, repairs, and incidental expenses	8	3	3
„ Bank charges	0	2	0
	279	9	0
„ Transferred to Good Samaritan Fund	560	9	0
„ Amount on deposit	3315	10	0
	3875	19	0
„ *Balance with Treasurer	1024	0	10
„ „ „ Secretary	4	2	5
	1028	3	3
	£8651	10	0

* This balance was required on December 31st, 1900, to meet the quarterly payments due on January 1st, 1901.

VICTORIAN ERA FUND. BALANCE SHEET, 1900.

To Balance	£40	16	7
„ Dividends	£126	12	4
„ Return of income tax	4	7	8
	131	0	0
	£171	16	7
By gratuities to unsuccessful candidates	£99	0	0
„ Balance	72	16	7
	£171	16	7
	£171	16	7

GOOD SAMARITAN FUND. BALANCE SHEET, 1900.

To Balance	£0 17 0	
„ Donations 1900	£559 8 0	
„ Annual subscription	1 1 0	
„ Dividends	10 6 6	
„ Return of income tax	0 2 7	
	£570 18 1	
	£571 15 1	
By gratuities	£10 0 0	
„ Balance	561 15 1	
	£571 15 1	
	£571 15 1	

We have audited the accounts, and certify the same to be correct, and everything in order, and have also satisfied ourselves that the securities of the invested funds are in the hands of the bankers, by whom the dividends are received on behalf of the Institution.

(Signed) THOMAS SWIFT,
THOMAS MANNING, } Auditors.
JESSE WILLARD,

January 16th, 1901.

The report and balance-sheet having been read by the secretary, Mr. Veitch moved that they be adopted, remarking that the society's affairs had never been more satisfactory. He alluded to the good fortune the society had had in being honoured by the Prince of Wales, who had become president, and to the fact that their Royal Highnesses the Princess of Wales and the Duke and Duchess of York had become patrons. The society, the speaker added, could not fail to benefit from such illustrious connections. Mr. Veitch then pointed out the excellence of the work done by the secretary, and the exceptionally small expenses incurred in the office management, considering the amount of work there was to do. Continuing, he said it was the most successful financial year the society had had. In conclusion he animadverted to the excellent work and the satisfactory state of both the Good Samaritan and the Victorian Era Funds. Dr. Masters seconded the proposal, which was carried unanimously.

The meeting then proceeded to the election of the officers for the ensuing year. Mr. H. J. Veitch was re-elected treasurer, and Mr. G. J. Ingram secretary. The auditors, Messrs. T. Manning, J. Willard, and T. Swift were re-elected, as also were the arbitrators.

Mr. H. J. Cutbush then proposed and Mr. Barwell seconded that Isaac Clark, William Cotton, William Craggs, John Eastwood, Thomas Gale, and Elizabeth Harris be placed upon the funds without the trouble or expense of an election. This was carried.

The result of the ballot was declared shortly after 5 P.M., when the scrutineers announced the result as follows:—Agnes Wright, 7916; Wm. Smith, 6299; Thos. Tyler (life member), 5208; Geo. Wills, 4975; Jas. Thatcher, 4671; John Gibbons, 4604; Cecilia Kent, 4228; Elizabeth Hackwell, 4190; William Tillery, 3961; and Samuel Mills, 3937. It had been intended to place another on the funds without election, but certain knowledge made this impossible for the time being. It was therefore proposed that Jas. Finch, 3486, and Wm. Moore, 2003, be elected in the place of the one omitted. This was unanimously agreed to.

Annual Friendly Supper.

At the supper Mr. Alderman Piper of Worthing presided, and there was a goodly number of members present. After the meal the first toast was that of "The Queen," and the chairman had the painful duty of announcing a peaceful ending to a beautiful life. He had, he said, to propose the postponement of the meeting, and he was sure he should be expressing the sentiments of everyone present in tendering heartfelt sympathy to T.R.H. the Prince and Princess of Wales in their trouble. The Queen, continued Mr. Piper, had swayed the destinies of the Empire and of the world, and by the nobility of her character and the purity of her life had raised the moral tone not of England alone but of the entire world. Future generations would, concluded the speaker, rise up and call her blessed for her great good. The proceedings then closed.

Glasgow International Exhibition, 1901.—At the Glasgow International Exhibition this year the Prince and Princess of Wales, will perform the opening ceremony. Amongst the foreign nations Russia so far easily takes the lead, having acquired 11,131 square feet in the inside of the buildings and 29,705 outside, the latter figures representing only the actual floor space of the special pavilions and administration office. France comes second with 20,600 square feet, all in the inside, and Japan third with 5000. Canada, with 12,000 square feet in the buildings and 12,000 in the grounds, is the largest exhibitor amongst the colonials, Western Australia following with 10,925, while Queensland makes a good third with 8050 square feet. A flower show on a big scale is to be held towards the end of August, and will be followed early in September by a fruit show, valuable prizes being offered at both so as to insure the support of the chief growers. The exhibition authorities are to communicate with foreign and colonial governments desirous of taking part in special fruit shows. The impression being that such exhibitions would be appreciated by visitors, and prove beneficial to exhibitors.

Young Gardeners' Domain.

Cocks and Pots.

EVERYTHING must have a beginning, and the young gardener's introduction to the horticultural art is often by way of the crocking bench. Not a very pretentious start, perhaps, that of cleaning and crocking pots; nor is it a very highly skilled acquirement at the best, but a necessary one for all that. Shakespeare has told us that we may find sermons in stones, and possibly if Shakespeare had lived in these days and been a gardener he might have treated us to a homily on the humble and prosaic crock. The very youthful gardener may be lucky enough sometimes to escape his apprenticeship with the crock hammer if he enters an establishment where each journeyman is expected to crock his own pots, or where a labourer is requisitioned for the job, but not infrequently, at the outset of his career, he finds himself wondering if his life is to be an eternal round of wiping out and crocking pots, clearing up after other people, and such-like menial occupations.

We have in mind a certain youngster who once went to a horticultural college. He was brimful of enthusiasm as he thought of the Grapes, the Melons, and the Cucumbers he would learn to grow; of the Ferns and bedding stuff he would learn to raise; and of how, after a short time, he would find himself producing such magnificent Roses, such glorious Chrysanthemums, such superb Carnations, that gardeners of his acquaintance who had not had the advantage of a college training should turn green with envy. He laughed to scorn those wisecracks who shook their heads and said that these colleges were all very well, but they would never turn out gardeners; they were so unpractical; there was too much theory; book-learning was all very well in its way, but that way did not lie in the direction of growing the best stuff at the lowest cost. But the young enthusiast was unmoved; surely it was practical, or if it was not, then a college training must be a delightful means of acquiring experience without undertaking any of the arduous labour usually considered necessary. But, alas! two long, solid days, seated on an upturned tub washing pots was sufficient to damp his ardour, and he began to think that college horticulture was, if anything, a trifle too practical. But in reality there is something to be learnt, even in connection with cleaning and crocking pots, though it is unquestionably not the most desirable part of the gardener's routine.

In cases where the plants are to stand in the pots some time, or where the pots are very dirty, it is generally best, if time can be spared to wash them thoroughly, inside and out, using a stiff brush, and standing them upside down to dry before using. All green deposit or mould should be got off the outside, as it impedes a free circulation of air which penetrates through the sides of the pot to the roots, and assists in assuring their healthy growth, besides an improved appearance, which is not always an entirely secondary consideration. It is important that the inside of the pot should be dry before using, or it will be found that on turning out for repotting the ball of soil will be inclined to adhere to the sides, instead of coming away clean and whole as it should do. As an alternative to scrubbing, the usual method of cleaning is to wipe out the inside of the pot with an old piece of rag or sacking, which is much the quicker operation, though, perhaps, a good many young gardeners if offered their choice between wiping out a dusty pot with a dusty piece of sacking in a cloud of choking dust almost enough to make one think of the Sahara Desert, and washing the pots, would choose the latter.

Crocking is a fairly simple matter, and yet very few novices will be likely to perform it satisfactorily at first without a word or two of advice from the foreman or gardener, for to break crocks quickly and yet to get them of the size and shape suitable for the pots they are intended for is not a work of instinct. If too small they will perhaps slip through the hole, or allow the soil to fall through and obstruct the drainage, causing waterlogging. Nor should they be so large that they do not rest on the bottom of the pot, but lodge about three-parts of the way down, for, as it will probably be explained to the novice, the sides of the pot are in no danger of falling in, and the purpose of a crock is not to act as a support to them. On the other hand, it is not advisable to put your crock in the pot to try how it fits, and then take it out and make a few alterations like a dressmaker with a ladies' gown; nor is it worth while to tap and chip round the crock like a sculptor at work on a statue, if you have any ambition to ever be anything more than a crock-breaker. The crock over the hole at the bottom of the pot should always be placed hollow side downwards, and the amount of drainage necessary depends almost entirely upon circumstances. Generally speaking, any pot less than 4 inches in diameter will do with one crock at the bottom, but no rule can be laid down.—A. W. D.

Thanks to "An Old Boy."

MANY thanks, old friend, for the New Year's thoughts for young thinkers (page 18). We have not forgotten your work of four years ago. The ground you trenched then has not all become barren, though some of it would benefit by being thrown up for the weather to pulverise. You may tell your critical friend that there are some of us who still can point to it as a red letter day of their lives; when some of the best actions of their lives were started. So cheer up, old friend, and may you be spared to fight the battles for the bothy, and to give counsel for many years to come. With best wishes for a happy and prosperous year from your boys.—W. C.

Royal Horticultural Society.

Scientific Committee, January 15th.

PRESENT: "Dr. M. T. Masters (in the chair), Mr. Bowle, Mr. Michael, Rev. W. Wilks, Mr. Sutton, Mr. Im Thurn, Mr. Hudson, and Rev. G. Henslow, Hon. Sec.

Loss of reserve matter in pruning.—The following communication on pruning Vines was received from Mr. Thomas Sharpe, Westbury, Wilts:—"The method in vogue of managing the growth and subsequent pruning of Vines appears to result in considerable loss of reserve matter. Physiology teaches that the compounds elaborated in the leaves, after necessary supplies are made to current growth and fruit, are stored for future use. Some of these are stored for the use of buds on the shoot the following spring. No. 1, the lowest or basal bud, is required for fruiting lateral next season, but No. 2, the next and onwards, are not, and are therefore cut off at pruning time, resulting in the loss of all the reserve matter stored in the shoot above No. 1. If I understand aright, every living cell of a plant is a perfect entity, though the connecting strands of protoplasm may manifest a quasi symbiosis, the supreme object of which is perpetuation either sexually or vegetatively as environment may render exigent. A mole, a rat, a rabbit, or even a toad may burrow under a Strawberry plant in summer, destroying more or less of the roots. The plant, deprived of a full supply of sustenance, becomes a suitable host for red spider, which makes its wonted havoc. The plant in consequence makes but miserable growth in August and September. The flowers of this plant next season will be small, but the pollen abundant, the growth of the tori stunted, but it may bear a mass of seeds. Again, a healthy Blenheim Apple tree attracts attention, the owner having arranged a manure heap in such a position that the liquid from it will keep the Blenheim over-supplied. Result: More growth the first season, but a diminishing growth afterwards for a few years, then two heavy crops of wretched fruit, all core and seeds. In these two instances of untoward environment the plants have adapted themselves by concentrating all their stamina to seed production. Can we turn such adaptations to account by the prevention of preparation for vegetative perpetuation above No. 1 bud in the Vine growth? Acting upon these thoughts I disbudded my laterals above No. 1 last July. Apart from really satisfactory appearance the Hamburgs exhibit no striking developments near the spurs, but the Muscat shows protuberances at the bases of the spurs, and these are quite conspicuous on that part of the rod which is four years old."

Mr. Hudson observed that it is always the basal bud which is used for stock purposes, as the eyes or buds are inferior in strength from below upwards along the lateral shoots. The basal bud always gives the most compact bunches of Grapes, the others supplying looser. He added that no pruning should be done until all the leaves had fallen. If the reserve material be contained in the shoot above the basal bud, and it be suggested by Mr. Sharpe that this could be utilised, then every bud must be suppressed except the basal. Experiments would show by comparison with those in which the lateral had been pruned down to the basal buds, whether the Grapes showed any superiority. It is hoped that Mr. Sharpe would continue his experiments, and record comparative results.

Injured Peach shoots.—Mr. James Hawkes of Osterly Park Gardens, Isleworth, sent shoots with the following remarks: "During the past two seasons, about the time the house is closed for forcing, a great many of the young shoots of Royal George (age of tree twelve years, growing in an early Peach house, and ripens end of June) have black rings round them, and from the buds small globules of gum exude. The tree in question has cropped well, has plenty of fibrous roots, and the growth is not over-strong. It has not been subjected to high or extremes of temperature, and is well supplied with water, nor has it been overfed with manure."

The specimens were sent to Dr. W. G. Smith for examination and report.

Climbing Cereus.—Dr. Masters exhibited photographs of a spirally climbing Cereus having a flattened stem, and tufts of small prickles proceeding from the edges. It has been named *Cereus Wittii*, and is from Brazil. The photos were received from Dr. Schumann of Berlin. Mr. F. Im Thurn observed how a Cereus in Guiana at first grows flat against a support, but when it rises freely above assumes a more cylindrical character. It would seem, therefore, to be one of Kerner's so-called "leaning" climbers, often forming a lattice-work by intersection of their shoots, if it have no adhesive roots such as this species of Cereus possesses. Mr. Henslow observed that the change of form is probably correlated with a different distribution of the mechanical or supporting tissue, for he finds that an Ivy shoot when supported has more pith and less wood than one of the same diameter growing freely in the air, in which the proportions of wood and pith are reversed. (See "Gardeners' Chronicle," xxix., third series, page 38.)

Carnations, single and double, on one plant.—A drawing was received from Mr. Cuthbertson illustrating this not uncommon occurrence. Mr. Michael, Mr. Sutton, and Dr. Masters had observed similar cases, as in Begonias also, especially late in the season. An analogous occurrence is seen in Clematis "Proteus," which bears double flowers early in the season, but single ones afterwards. In all cases it appears to be due to a check in nutrition.

Pinus cone.—Dr. Masters exhibited a fine cone, received from Sir Ch. Strickland, of *Pinus ponderosa* var. *Benthiana*. It is a native of California.

Mistletoe variety.—Mr. Corderoy of Didcot sent a bough of Mistletoe bearing longer and broader leaves than those of the usual wild form. It was believed to have been cut from an Apple tree. It was observed that the variety arose from some innate cause, but of course traceable to its parasitism, and that as Apples vary by the change of their environment, so the Mistletoe is similarly affected.

Australian Rhubarb.—Mr. Sutton called attention to a variety of Rhubarb from Australia grown at Reading for some few years. It starts into growth every year in November, producing leaves with stalks 2 feet long and three-quarters of an inch in diameter of a scarlet colour. Unfortunately in this climate it can only be depended upon during a mild season, the late frosts having destroyed it. As Rhubarb is a native of N.-E. Asia, it had apparently quite changed its habit in Australia, where the seasons are reversed; but has for the present retained its period of leafing which it acquired in the S. hemisphere.

Clavaria, rare.—Mr. Bunyard sent a plant growing on Pine wood in a cellar. It is snow white, much branching with pointed ends. Dr. M. C. Cooke reports that it is the rare species *C. Krombolzi*.



PEAR JOSÉPHINE DE MALINES.

Pear Joséphine de Malines.

At the meeting of the Royal Horticultural Society held in the Drill Hall on Tuesday, January 15th, Messrs. J. Veitch & Sons, Ltd., Royal Exotic Nurseries, Chelsea, placed before the Fruit and Vegetable Committee examples of this excellent Pear, and received for it a first-class certificate. It is a very old variety, having been raised in 1830 by Major Esperen of Malines, who named it after his wife. Dr. Hogg describes it in the "Fruit Manual" as follows:—"Fruit, above medium size. Skin, yellow, with a greenish tinge on the shaded side, and with a tinge of red on the side next the sun; the whole surface strewn with large russet spots. Eye, open, set in a rather shallow depression. Stalk, three-quarters of an inch long, stout, and inserted in a narrow cavity. Flesh, yellowish, with a tinge of red, melting, and very juicy, sugary, vinous, and richly flavoured, with a high rose-water aroma. A most delicious Pear; in use from January till May. The tree is hardy, and an excellent bearer."



Hardy Fruit Garden.

Renovating Fruit Trees.—Advantage has to be taken of the winter season to carry out the work of renovating fruit trees when from various causes something is necessary to be done in order to improve them in fruit-bearing capacity. Frequently this can be effected by thinning out, so as to better dispose the shoots and branches more fully to the light down to their base. Renovation, however, also includes root-pruning, this being necessary in many cases in order to check exuberant growth and predispose buds to form fruiting spurs rather than rush away into wood growth.

Apples and Pears.—Many varieties of Apples are not regular and steady bearers even under favourable conditions, producing sometimes a crop only once in two or three years, missing even for longer periods when the growth has been neglected and crowding has resulted. With such varieties, which include White Juneating, Fearn's Pippin, and Blenheim Pippin, the annual reduction of crowded wood is necessary, and if this should not be carried out, periodical renovation becomes necessary. This, though not effective at once, has the desired effect in time.

Restricted Trees.—The kind of renovation necessary is best indicated by the form of training. Those which are trained in restricted form if crowded with growths of main branches must have these reduced to a foot apart, or to a similar distance, all over the trees. The next step is to reduce the number of spurs, following this by shortening those much elongated and extending a long way from the main branch. With trees that have been very much neglected in this respect the cultivator is liable to prune too severely. The best policy is to work down the surplus gradually, so that an undue check is not given to the trees, which may postpone a profitable fruiting period. The gradual method consists in carrying out the various forms of pruning over one, two, or several successive seasons. For instance, a tree burdened with crowded main branches may have a portion of these removed the first season, dealing with the most useless and unprofitable. Accord the same treatment to the spurs in regard to number and length, and complete the pruning another year.

Root-pruning is always best dealt with in two stages, carried out in successive years. The severe checks liable to be given the roots are thus obviated, and the balance of wood growth and root growth better and more rationally equalised. During the course of the next month any renovating details may be carried out, but the earlier it is completed the better before the active rising of the sap begins.

Standard Trees.—These are characterised by freedom of growth, as opposed to restricted training. The freedom, however, is likely to be overdone if due precautions are not taken to prevent overcrowding, especially in the centres of trees. In removing the branches that are not required take them out entirely, or at suitable junctions with others. Shortening is detrimental to habit, form and fruitfulness, and cannot be too strongly deprecated in the case of general pruning of standard trees. So disposing the branches that light and air can pass through the trees is highly conducive to their acquiring and retaining a fruitful habit. Cut out spray growth which starts from old wood.

Plums and Cherries.—*Wall Trees.*—With trees on walls, a combination of the two systems—spur pruning and laying-in young growths—is undoubtedly the best. Examine the trees as a whole first, and mark for removal branches which can with advantage be dispensed with. This will leave the rest free to be freshly disposed over the space available. Some attention, more or less, should be given to this re-arranging each season, as branches and parts of branches become exhausted. Endeavour to keep the spurs near the wall by gradually reducing some each season. If the trees are fan-shaped allow young growths to predominate, forming spur growths chiefly from those which cannot conveniently be laid in. Aged and overgrown trees must be brought back to fruitfulness and good form gradually. Severe measures in pruning often result in gumming in stone fruit trees. This must be guarded against as much as possible.

Standard and Half-standard Plums and Cherries.—These forms of trees are the most prolific, and are easily managed provided that when young they are well established in form—that is, the requisite number of branches disposed to form a shapely tree. In order to do this judicious pruning is necessary, but when it is once effected little pruning is required in after years. Occasionally a branch which may be extending inconveniently may be bodily removed, and the same should be practised on branches becoming exhausted, weakly, or that may be completely dead. Suckers are troublesome in the case of many old trees, and require to be carefully dug out. The renovation of the roots ought to be mainly effected by top-dressing with material containing lime and wood ashes, mixed with good loam. The upper crust of the soil can be removed down to the surface roots, on which spread the mulch. A dressing of farmyard manure may be placed on the mulch, and allowed to wash-in with the rain.

Fruit Forcing.

Cherry House.—A house of Cherry trees planted out or in pots is found here and there throughout the country, and the fruits they bear are very desirable additions to the dessert at the end of April and through May, when the house be started at the new year. The utmost care must now be taken to have the trees perfectly free from aphides, which seem to emerge from the eggs with the buds casting their scales, and they at once fasten on the growths. This must be prevented by fumigating with some approved preparation of tobacco, so as to thoroughly annihilate the pests, for it is essential to a good set that the blossoms be perfectly developed; therefore effect the destruction of the pests before the flowers unfold. Syringe the trees occasionally up to the blossom showing the loveliest of all white, but cease then, damping the paths and borders instead, and ventilating freely. Keep the house at 40° at night, 45° to 50° by day from fire heat, ventilating at 50°, and allowing a rise of 10° to 15° from sun heat, with full ventilation, closing the house for the day at 50°. Take care not to allow the border to become dry, and remain in that state; but water as necessary, so as to keep the soil moist, yet not supplying it excessively, so as to make the border sodden, and attend regularly to the needs of trees in pots.

Peaches and Nectarines.—*Earliest Forced Trees.*—The flowers must be fertilised as they expand and the pollen becomes ripe, distributing it over the stigmas. Syringing may be resorted to both morning and afternoon when the fruit is well set, but in dull weather damping the paths and borders will be sufficient, and in cold weather syringe sufficiently early to allow the foliage to become dry some time before nightfall. Water used for syringing must be of the same temperature as the house. Ascertain that there is no deficiency of moisture in borders inside, watering thoroughly if necessary, as dribblets are next to useless. Disbudding must soon have attention. It must be done carefully at this early season, removing a few growths daily from a tree preferably to many at distant intervals. The latter practice gives a check to the roots at the expense of the fruit, which for lack of assimilated matter often falls at this juncture in consequence of sap congestion.

Maintain the night temperature at 55°, 5° less in very severe weather, and 5° more in mild weather, 60° to 65° by day from fire heat, 5° less on these figures when the weather is cold and dull. Ventilate early, admitting a little air at 65°, not allowing an advance over 70° without full ventilation, closing at 65°, always excepting a small portion left at the top of the house constantly. This prevents a vitiated atmosphere, securing a healthy condition in the leaves, enabling them to do more and better work in the daytime.

Second Early Forced Trees.—The trees started at the new year are expanding their blossoms, and before they open it is well to make a close scrutiny of the trees, and if any aphides are seen fumigate or vapourise to exterminate pests. Great care is necessary in fumigating, as the organs of fructification are easily irreparably damaged. Where there is an excess of blossom buds draw the hand the contrary way of the growth along the under side or back of the trellis, so as to remove those situated there; and if that is not enough thin them well with the forefinger, leaving the best situated and most promising. Syringing must cease when the buds show colour, but damp the house in the morning and early afternoon; for though damp, stagnant, cold air is not favourable to Nectarine and Peach blossoms, or the trees in any stage of their growth, a dry atmosphere is pernicious by provoking constant and excessive evaporation. See that inside borders are thoroughly moistened through to the drainage, but avoid needless waterings.

Succession and Late Houses.—Finish pruning the trees in succession houses at once, not deferring that of those in late houses beyond movement in the buds. Dress the trees with a disinfectant, such as carbolic or paraffin soap 4 ozs. to a gallon of water, taking care not to dislocate the buds, and not using the solution so strong if the buds are advanced in swelling. Secure the trees to the trellis, allowing ample space in the ligatures for the swelling of the branches, and leave room between these for laying in young wood for future bearing. Fork the border lightly, not disturbing the roots, removing any loose soil, and supply fresh loam, but not more than an inch or two in thickness, and top-dress with an approved fertiliser.

If the borders are at all dry they should be given a thorough watering. Where the roof-lights have been removed watering will not be required, the soil being in a thoroughly moist condition from rain. Maintain a genial atmosphere as a preventive of bud-dropping. Bud-falling, however, is due to other causes than deficiency of moisture at the roots or in the air during the resting period. Over-maturity, as in early and consecutively forced trees, imperfect bud formation through a deficiency of moisture at the roots or in the atmosphere during the summer, or lack of assimilating power and support through attacks of parasites, and too crowded a condition of the foliage, conduce to the misfortune.

Strawberries in Pots.—The plants introduced early in December have pushed the flower scapes simultaneously with the leaves, and minute aphides are showing themselves. Where this is the case fumigating must be had recourse to so as to compass their destruction before the flowers expand. Damp the paths in the morning and early afternoon, and keep the temperature at from 50° to 55°.

artificially, with an advance of 10° to 15° from sun heat. On bright days the plants as well as the paths should be syringed, as evaporation will take place much more rapidly, and the atmosphere will become sufficiently dry before dark. Lose no opportunity of closing early, so as to raise the temperature to 70° or 75° from sun heat. Allow the temperature to fall to 50° at night; 5° higher if the weather be mild. Look the plants over daily for watering, giving those in need a thorough supply.



All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Wood Ashes and Charred Rubbish (*Provincial*).—It is not necessary that such useful refuse be kept perfectly dry; still, it should not be saturated so as to get into a mortar-like mass. It is good for nearly or quite everything—flowers, fruit, or vegetables. It is excellent for spreading in the drills with Potatoes and various seeds, for digging into flower beds and spreading on the soil over the roots of trees and lightly pointing in. If you had stated the crops you particularly wished to grow, we might, perhaps, have given a little more definite advice.

Garden Refuse (*S. A. O.*).—If you can procure about 4 bushels of lime in lumps from a kiln, break any that are larger than your hand, turn over the refuse, and in the process mix the lime with it, then cover the heap with a layer of soil, the compost will be excellent for Potatoes, and ready for use in March, turning the heap over a month previously. The lime cannot be used too soon, and more of it than mentioned will do no harm. In the absence of lime, perhaps the refuse had better be left till another year; but everything depends on its condition.

Plunging Pots in Propagating House (*J. C.*).—As you cannot procure cocoa-nut fibre refuse or sifted spent tan, unquestionably the best plunging materials are leaves of a hard nature, such as Oak, Beech, and Spanish Chestnut. These are better than moss litter from their more open character, and also through evolving ammonia vapour and the concomitant moisture, which are very essential in early forcing houses and propagating structures. Moss litter (we presume you mean to employ it in the fresh state) is not a bad plunging material after being properly moistened with rain, or preferably lime water, the latter being clear, as it certainly is very retentive of moisture, and this being given off corresponding to the heat or condition of the atmosphere aids in maintaining a moist state of the air, so important in propagating structures. If the moss litter has been used in stables it will not be suitable for plunging purposes until sweetened, being, like ordinary stable manure, thrown into a heap, and when heated turned outside to inside, repeating the turning at intervals of about four days two or three times, thus causing the dissipation of the rank steam, and so treated the material may be used safely for plunging purposes.

Dressing Seedling Asparagus Roots with Bordeaux Mixture (*W. S.*).—The seedling Asparagus roots that you intended planting next spring, and which were affected with blight last summer, would not, in our opinion, be at all benefited by soaking the roots after being lifted ready for planting in the Bordeaux mixture that has been recommended for syringing Asparagus in the summer. On the other hand, the treatment would be calculated to have a prejudicial effect on the growth of the plants, while not having any materially disastrous effect on the teliospores or resting form of the fungus, *Puccinia Asparagi*. It might act prejudicially on the first growths from the teliospores or black mildew spores, the spring or pro-mycelium spore-producing hyphæ being killed by contact with and absorption of the copper, which, though carbonate, possibly is dissolved by the ferment of the fungus to its own destruction. If anything be used as a preventive it should be hot water, the roots being soaked in that at a temperature of 130° to 135°, or a mean of 132½°, for five minutes, which treatment is calculated to destroy the protoplasm contained within the teliospores, and thus prevent their germination. It depends, of course, upon their presence, they being likely only to adhere to the dead or remaining parts of the "grass," and on the crown or surface soil about that of the plants. The proper course to pursue is to plant the Asparagus plants as they are, and spray the "grass" from time to time with Bordeaux mixture, so as to keep it coated with the finest possible film of this protective and preventive material. This—prevention—is the only rational treatment.

Liability of Horticultural Committee (*W. T.*).—Members of committee may be liable to the secretary whom they have told to incur expenses, but not to the persons contracted with. If a committeeman gives an order he is liable and not the secretary.

Corporation Allotments (*A. Webster*).—We cannot undertake to answer complicated legal questions such as yours, depending on the interpretation of several Acts of Parliament. We have not the Acts, and we have not the time. A practising solicitor is the proper person.

Trachelium coeruleum (*M. D. B.*).—This plant is a native of the South of Europe, and though moderately hardy it suffers from unusually severe winters, therefore it is desirable in most cases to preserve a plant or two under glass; but it is easily raised from seed, and seedlings flower the same season. Allied to the Campanula, it nevertheless differs from many of that genus in its habit of growth; it does not throw up suckers like most of that family, but produces side shoots, which make excellent slips or cuttings. These, if put into a cold pit or under a hand-glass, where some protection can be afforded them in winter, make good plants in the following spring.

Orchid Leaves Spotted (*J. C. B.*).—The spots on the Orchid leaves sent are caused by thrips, possibly owing to the plant having been grown in a dry atmosphere. The marks will never be erased from the leaves attacked, but you should endeavour to rid the plants of the insects in order to prevent any further mischief. Dipping the plants in a fairly strong solution of softsoap and tobacco water, and carefully sponging afterwards, is the best remedy; but this is quite useless unless you maintain a more suitable atmosphere. The temperatures you give are right, the fault lies entirely in the atmospheric conditions of the house, as evinced by the poor texture of the foliage sent.

Poplar Wood (*H. W. C.*).—The wood of Poplars is put to many purposes, notably that of *Populus nigra* (the common Black Poplar), for making cart bottoms, and in many parts of the continent for the manufacture of wooden shoes. The wood of *P. alba* is used for the purposes previously named, and also by cabinet makers. For making musical instruments the timber of *P. caulescens* is in great demand, but for this purpose the wood must be sound and large. *P. monilifera* affords some excellent timber, which when kept dry is very durable. It is excellent for use inside houses. Our correspondent will see that it may be turned to good use, the industries mentioned being only a few of the more principal ones, there being many others, but they are, perhaps, of minor importance. The wood of Poplars is seldom or never used for burning, being practically useless for this purpose.

Begonias and Gloxinias for Exhibition (*H. A. P.*).—Start the Begonias and Gloxinias in March in a warm greenhouse. Shake out the Gloxinia tubers when half an inch of new growth appears, and put them in the same size pot in a mixture of turfy loam two parts, peat one part, leaf soil one part, with a sprinkling of bonemeal, crushed charcoal, and silver sand. Use the compost moist, and do not give water too freely at first. A moderately warm moist atmosphere, with slight shade, will suit them. When growing freely gradually inure them to more air and less heat, and they will no doubt bloom freely by the time you name. The Begonias may be treated similarly, or the tubers could be laid in moist cocoa-nut fibre refuse and sand while growth starts, then pot in the soil recommended for Gloxinias, but dispensing with peat and substituting decayed manure at the rate of one-fourth. Immediately growth starts freely place the plants close to the light, giving them also more air. During June and July grow them in frames, where a sturdy healthy habit will be induced. It will be safer, in order to have plants in the best condition, to start a few later, because the weather may be such in June or July as to bring on the plants very rapidly indeed. You must use your own judgment as to retarding or forwarding the plants during the few weeks previous to the show. When the pots are full of roots weak liquid manure will be helpful in giving tone to the foliage and deeper colour to the flowers.

Oncidium Phymatochilum (*Orchis*).—Unless the roots of your Orchids are eaten by woodlice or other insects, there is something in the moss that is detrimental to them. Sphagnum alone is hardly the material to use for the species you name, but if properly washed and picked over before use it would not cause the roots to decay. The best thing you can do is to find out, first of all, whether it is the work of insects or not, and with plants suspended from the roof this is an easy matter. Dip each plant in a vessel of water for an hour, and if there are any insects in the compost this will drive at least some of them out. After this, lay some pieces of potato about them, cutting a tuber in two and scooping it out a little, placing the hollow side to the compost. Wait a day or two until the flesh of the potato shrivels a little, and then examine them every morning. If there are any you can take it that herein lies the mischief, and when all are trapped it will cease; but if none are found then it must be the compost, and the best thing to do will be to turn the plants out of their baskets and give fresh material, using half the quantity of moss, the other half good peat fibre. See that no foreign material is introduced with either ingredient, water carefully after repotting, and you should find the roots enter the compost freely. Of course we take it for granted that the atmospheric conditions of your house are right, as a very low temperature, combined with too much moisture in the air, would be likely to cause the same tendency to decay.

Genista Flowers Dropping (Reader).—The hot and dry atmosphere has been the cause of the Genista flowers dropping. The transpiration from the growth has been greater than the comparatively inactive roots could at first supply in a temperature of 60°. Probably the soil in the pots had been allowed to become dry, or if that was not the cause the sudden transition from a cool to a hot temperature brought about the results stated. Hardwooded plants should, in forcing, be gradually inured to warmth. Lightly syringing daily with tepid water and keeping the floors moist are of great assistance. Plants for forcing into bloom in January ought to be specially prepared for the purpose, but Genistas are not usually flowered before February.

Grafting Camellias (A. R. D.).—The best method of grafting Camellias is by the old-fashioned splice or tongue process, commonly called whip grafting, and the proper time to do it is in early spring, as soon as growth commences. In the case of old trees it is the better plan to operate on all the growths at one time, cutting back the plants to the extent necessary for forming, when the grafts are inserted and taken, a good head. This heading down should be done without much further delay, and when the sap flows freely insert the grafts, and as the growths will be much larger than the scions two may be placed on each, taking care that the barks coincide exactly, at least on one side, binding securely, and covering with grafting wax or clay, so as to exclude the air. As the house cannot possibly be kept close enough to maintain the scion fresh until union has taken place it would be safer to proceed by bottle grafting—that is, the scion below the junction inserted in a phial containing and kept replenished with rain water. In that case you may operate on a portion of the branches one season, and another portion the following year; but the grafts, as a rule, take better when all the juices are concentrated on the scions, there not being any outlet or means of drawing the sap from them by growths being left. The main point is to keep the scions fresh, and then there is no difficulty. This is effected by having them long enough for the lower part, divested of leaves, to be in water as suggested, one or two leaves being sufficient at the top of the healthy young growths that are chosen for attachment.

Names of Fruits.—Notice.—We have pleasure in naming good typical fruits (when the names are discoverable) for the convenience of regular subscribers, who are the growers of such fruits, and not collectors of specimens from non-subscribers. This latter procedure is wholly irregular, and we trust that none of our readers will allow themselves to be made the mediums in infringing our rules. Special attention is directed to the following decision, the object of which is to discourage the growth of inferior and promote the culture of superior varieties. In consequence of the large number of worthless Apples and Pears sent to this office to be named, it has been decided to name only specimens and varieties of approved merit, and to reject the inferior, which are not worth sending or growing. The names and addresses of senders of fruit or flowers to be named must in all cases be enclosed with the specimens, whether letters referring to the fruit are sent by post or not. The names are not necessarily required for publication, initials sufficing for that. Only six specimens can be named at once, and any beyond that number cannot be preserved. They should be sent on the first indication of change towards ripening. Dessert Pears cannot be named in a hard green state. The practice of pinning numbers to the eyes of the fruit tends to destroy one of the most characteristic features and increases the difficulty of identification. When Plums are sent to be named young wood of the trees should accompany them. Leaves of the trees are necessary with Peaches and Nectarines, with information as to whether the flowers are large or small. (J. L. S.).—1, Comte de Lamy; 2, Bergamotte Hertrich; 3, Lord Derby; 4, pale fruit of Tyler's Kernel. (J. C.).—1, Beurré Diel; 2, Golden Winter Pearmain; 3, Alexandre Lambré. (J. E.).—Broad crimson Apple resembles Winter Quarrenden; small red Apple perhaps a very dark fruit of Scarlet Nonpareil; conical Apple probably a small, perfectly formed, and beautifully coloured specimen of Annie Elizabeth. In sending other specimens kindly number them, in accordance with our rules. (J. C. A.).—1, unknown and useless; 2, Cellini, very late; 3, not the true Winter Queening, but probably a local variety known by that name; 4, Wheeler's Russet; 5, Golden Pippin; 6, Bergamotte Esperen.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (J. L. S.).—5, Begonia Haageana; 6, Aspidium falcatum. (R. R.).—1, Ceanothus rigidus; 2, Garrya elliptica; 3, Thuopsis dolabrata; 4, Berberis Darwini. (P. S. P.).—1, Pteris tremula; 2, Adiantum Pacotti; 3, Asplenium

pubescens; 4, Selaginella caesia; 5, Cyrtomium falcatum; 6, Pteris cretica. (G. S. C.).—1, Coronilla glauca; 2, Metrosideros floribunda; 3, Impatiens Sultani; 4, Mesembryanthemum tenuifolium.

Covent Garden Market.—January 23rd.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, table, $\frac{1}{2}$ bush. ...	2	0 to 4	6	Oranges, case ...	6 0 to 150
" cooking, bush. ...	2	6	7	Pears, crate ...	3 0 7 0
" Californian, case ...	7	6	9	" stewing, case of	
Chestnuts, bag, from ...	5	0.	15	72 to 120 ...	4 6 6 7 6
Cobnuts, doz. lb., best ...	4	0	5	" Californian, case	15 0 18 0
Grapes, black ...	0	6	2	" $\frac{1}{2}$ case ...	4 0 9 0
" white, per lb. ...	1	6	5	Pines, St. Michael's, each	3 0 6 0
Lemons, case ...	9	0	16		

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	6 to 4	0	Mushrooms, forced, lb. ...	0 8 to 0 9
" Jerusalem, sieve	1	6	0	Mustard and Cress, pnnt.	0 2 0 0
Asparagus (Spruce Grass) ...	0	6	0	Onions, Dutch, bag ...	3 6 0 0
" Paris Green ...	4	0	5	" English, cwt. ...	5 0 0 0
Beans, French, per lb. ...	0	5	0	Parsley, doz. bnchs. ...	2 0 0 0
" Jersey, per lb. ...	1	6	2	Potatoes, cwt. ...	3 0 7 0
Beet, red, doz. ...	0	6	0	Rhubarb, doz. ...	1 0 1 3
Brussels Sprouts, sieve ...	0	9	1	Savoys, tally ...	2 0 3 0
Cabbages, tally ...	3	0	5	Scotch Kale, per bushel ...	0 9 1 0
Carrots, doz. bnchs. ...	2	0	3	Seakale, best, doz. ...	15 0 18 0
Cauliflowers, doz. ...	1	6	3	" 2nd, doz. ...	6 0 8 0
Celery, bundle ...	1	0	0	Shallots, lb. ...	0 2 0 3
Cucumbers, doz. ...	12	0	18	Spinach, bush. ...	2 6 3 6
Endive, score ...	1	6	0	Tomatoes, English, lb. ...	0 4 0 7
Herbs, bunch ...	0	2	0	Turnips, doz. ...	2 0 3 0
Leeks, bunch ...	0	1 1 2	0	Turnip tops ...	0 9 1 0
Lettuce, doz. French ...	0	8	1		

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Asparagus, Fern, bunch	1	6 to 2	6	Lilac, white, bunch, ...	3 0 to 5 0
Carnations, 12 blooms ...	2	6	3	Lily of the Valley, 12 bun.	8 0 15 0
Cattleyas, doz. ...	10	0	18	Maidenhair Fern, dozen	
Chrysanthemums, dozen				bunches ...	4 0 8 0
blooms ...	1	0	3	Marguerites, doz. bnchs.	2 0 4 0
Daffodils, doz. ...	12	0	15	" Yellow, doz. bnchs.	2 0 4 0
Eucharis, doz. ...	4	0	6	Mimosas, bnch. ...	1 0 1 6
Gardenias, doz. ...	3	0	5	Odontoglossums ...	6 0 8 0
Geranium, scarlet, doz.				Poinsettias, doz. blooms.	8 0 12 0
bunches ...	8	0	12	Roses (indoor), doz. ...	2 0 4 0
Hyacinths, doz. ...	4	0	8	" Safrano, doz. ...	1 6 2 0
Lilium lancifolium album	3	0	5	" Tea, white, doz. ...	1 0 3 0
" rubrum	3	0	5	" Yellow, doz. (Perles)	2 0 4 0
" various ...	4	0	8	Smilax, bunch ...	3 0 5 0

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acers, doz. ...	12	0 to 24	0	Foliage plants, var., each	1 0 to 5 0
Arbor Vitæ, var., doz. ...	6	0	36	Geraniums, scarlet, doz.	6 0 10 0
Aspidistra, doz. ...	18	0	36	" pink, doz. ...	8 0 10 0
Aspidistra, specimen ...	15	0	20	Hydrangeas, white, each	2 6 5 0
Azaleas, various, each ...	2	6	5	" pink, doz. ...	12 0 15 6
Bononias, doz. ...	20	0	24	" paniculata, each	1 0 3 0
Cannas, doz. ...	18	0	0	Lilium Harrisii, doz. ...	8 0 18 0
Crotons, doz. ...	18	0	30	Lycopodiums, doz. ...	3 0 6 0
Dracæna, var., doz. ...	12	0	30	Marguerite Daisy, doz. ...	8 0 10 0
Dracæna, viridis, doz. ...	9	0	18	Mignonette, doz. ...	8 0 12 0
Erica, various, doz. ...	8	0	18	Myrtles, doz. ...	6 0 9 0
Euonymus, var., doz. ...	6	0	18	Palms, in var., each ...	1 0 15 0
Evergreens, var., doz. ...	4	0	18	" specimens ...	21 0 63 0
Ferns, var., doz. ...	4	0	18	Roses, doz. ...	6 0 18 0
" small, 100 ...	4	0	8	Stocks, doz. ...	8 0 12 0
Ficus elastica, each ...	1	6	7		

Trade Catalogues Received.

Barr & Sons, King Street, Covent Garden.—*Seeds.*
W. Clibran & Son, Altrincham.—*Seeds.*
Daniel Bros., Norwich.—*Seeds.*
Frank Dicks & Co., Deansgate, Manchester.—*Seeds.*
Dicksons & Co., Waterloo Place, Edinburgh.—*Seeds.*
W. J. Godfrey, Exmouth.—*Chrysanthemums.*
Hogg & Robertson, Dublin.—*Seeds.*
Kelway & Sons, Langport.—*Manual.*
Kerr Bros., Dnmfries.—*Seeds and Plants.*
T. Morel & Fils, Lyons, France.—*Trees.*
J. R. Pearson & Sons, Lowdham, Notts.—*Seeds.*
Stuart & Mein, Kelso, N.B.—*Seeds.*
W. Wells & Co., Earlswood, Redhill.—*Chrysanthemums.*



Where We Fall Short.

WE were asked the other day a question relating to agricultural certificates—i.e., vouchers of proficiency, and we were a little puzzled as to our reply. Rather a curious admission to make in the first agricultural country of the world. Of course it is easy enough to give a list (a very short one) of the agricultural colleges and schools, but that is not exactly what is needed. These places of education are more for the “classes” than the “masses.” They demand somewhat heavy fees and protracted terms, and do not catch the man who really needs their help most.

There is an old law about supply and demand, and when the demand is steady and continuous the supply always comes from somewhere, often from the most unexpected places. Well, we take it there has been up to now no great demand for agricultural training—that is, systematic training, or we think facilities would have been given.

There has been a very general feeling among us who guide the plough, or cause it to be guided, that we know more of our business than anyone could possibly teach us. In fact, we have been a bit puffed up with pride, and as long as things went well we were perfectly content. But a bad day dawned; we could not make ends meet, we could not make Wheat growing pay, dairy work was at a discount, and the value of stock an unknown quantity. Foreign competition crowded us out of our own markets, and we were sadly nonplussed.

In our old system there had been many a weak spot, little leakages not noticed in fair weather, but proving of danger under a stormy sky. We had to meet the times by new methods, and we were some of us stupid about grasping the new ideas; but unless we do get hold, we stand little chance of seeing our own again.

Now let us see what provision is made by State or otherwise for the furtherance of agricultural education in Great Britain. We do not say Ireland, for in this particular she is before us. First, we have a Minister of Agriculture; well, what are we to say about him? A worthy man, no doubt, and we hope he will do his duty; but he has, if we mistake not, to learn it first, and when that lesson is acquired this Ministry may be out of office. Then we have some good agricultural colleges, well staffed, well equipped, for the gentlemen commoners of England. Then two or three, where the terms are not quite so prohibitive, and where work is well done.

Some of the county councils are doing good work in this respect by the establishment of county farms, dairy institutes, and the like, and the colleges at Newcastle, Leeds, and Reading; but, alas! most of the agricultural counties are still asleep, and need a great awakening. “Gallant little Wales” has done well for its size, and there are also agricultural schools at Aspatria and Dauntsey; also, Lady Warwick has an agricultural training school on her estate in Essex. But like Philip of old, we are constrained to say, “What are these among so many?” We have not referred to those students who have successfully passed their examination in agriculture from training colleges, and from science classes. We will just give the figures without comment.

NUMBER OF STUDENTS EXAMINED IN AGRICULTURE.

Year.	In Training Colleges.				In Science Classes.			
1893	612	...	...	...	6046
1894	626	...	...	...	4095
1895	311	...	...	...	3024
1896	78	...	...	...	2318
1897	10	...	...	...	1852
1898	19	...	...	...	975

Out of these 176 failed to pass. We said we would make no comment, but we are constrained to ask one question: Did the students come to the conclusion that a diploma was of no practical value, or were they idle? We cannot answer it, but we do not believe it was totally idleness. What we do think is that the instruction was inefficient.

It is impossible to teach agriculture from a book alone; there must be practical and prolonged acquaintance with the soil and with the stock, and we doubt if an average lifetime is long enough for the

study. We have made great progress with matters educational. We are now far beyond the three R's, but for all that we have grasped in many instances the shadow rather than the substance. We teach our rural children any earthly subject rather than that by which their parents earn their daily bread. They will tell you glibly the rivers and mountains of Central Asia, but they would be fairly cornered if asked for a list of indigenous weeds, with their hurtful properties. They will draw from models, and square the circle, but they could not for their very life ascertain the extent of the cow pasture. Their powers of observation have not been trained. They will look at the corner of the morning paper for the weather forecast instead of being, like their grandfathers, full of weather lore themselves.

The main idea of the village lad seems to be to get away from the village by fair means or foul. He is not to blame; it is the system of education, which has entirely omitted the work of giving him something of a technical training. We are counted a rich country, and yet our public grants of money in aid of agricultural education are simply as a drop in the ocean compared with the grants of other and more far-seeing nations. We read of little Denmark, with its population of only 2,160,000, spending £108,000 in promoting agriculture in 1896. Fifty years ago this industry was on the verge of bankruptcy; now it is in a prosperously healthy condition, and supplies over 45 per cent. of our total butter imports. We suppose we here in England have not reached the bottom yet; a few more of us have to be totally ruined. The long lane has not come to the turning point, and then—and not till then—are we going to seek remedial measures.

We intend to give in a future paper a little account of the work done in Canada. It will perhaps prove an “eye opener” to some of us. These young countries are more active and energetic than the Motherland; at any rate, they do not allow a chief industry to stand very nearly on the brink of ruin. They are systematic and business-like, and therefore thrive.

Work on the Home Farm.

A thaw, three very sharp frosty nights, and now again another thaw with a southerly wind and rain; such has been the weather of the past week. During the first thaw sheepfolds were in a terrible state, as there was no rain to settle the mud. All the sheep had to be taken on grass; since then they have been back on Turnips, and now it is grass again. Fortunately there is a nice bite, but we would rather keep it until the ewes have lambed. A few of the largest of the Turnips are rotting, but as a rule they are fairly sound. So far we have seen no sheep on Swedes; how different from last year, when many farmers had almost finished them by February 1st.

A good deal of manure has been got out, but to-day both roads and fields are in a dreadful mess, and will be made worse by continued carting. It seems we are not to have any continued frost, so we must manage without it. Therefore we must hope for drying winds as the days lengthen and the sun gains power. There is a considerable breadth of bare land behind the sheep waiting for the plough, but it must wait, for the land must be ploughed when dry.

However this dirty winter may have suited farmers, that most industrious of animals the mole seems to have thriven, for we have seen to-day a grass field almost covered with mole hills. Our opinion as to moles is contrary to that of most farmers, as we think they are most useful animals, especially on grass land that is not easy to drain. Certainly the hills require attention as to spreading, but a man with a shovel will soon spread a large quantity which have been freshly thrown up; the grass greatly benefits by the mulching of fresh soil, and the drainage is cheaply performed at the cost of this spreading. The only crop which is injured much by moles is the young Clover plant growing amongst corn, and it is only in and around such fields that we should restrict the movements of these useful little animals.

As we forecasted not long since, store pigs are becoming very scarce and dear, and it is little can be got for £1. What a gold mine that sow would be now which a friend of ours sold to a clergyman, and which bred him 111 pigs during an extended life! But there is something in the atmosphere around a vicarage which is of great assistance to the multiplication table.

Wheat is showing signs of wireworm, and opportunities for rolling must be watched for. It may be some time yet, we fear.

Land a Halfpenny an Acre.—The new Land Bill for Victoria, which has been brought in with the object of meeting the demand for more liberal provision for the requirements of those anxious to settle on the land, provides that grazing areas not exceeding 1920 acres may be taken up for twenty-one years, at a rental of halfpenny per acre. Allotments of 960 acres are purchaseable under the same measure at 5s. an acre, the payment extending over a term of twenty or forty years.

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No 1075.—VOL. XLII., THIRD SERIES.

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Journal of Horticulture.

THURSDAY, JANUARY 31, 1901.

Old Gardens and New Gardeners.

PERHAPS there is a no more trying time in a gardener's career than when his turn comes to give up his foremanship and take the responsibility of an establishment on his own shoulders. Presumably he is young, and consequently ambitious, anxious to shine as a cultivator, and make a name for himself in that occupation which he has chosen for his own. Hitherto he has been subject to a superior will without entire responsibility, and at times he may have chafed at the necessity of following certain routines, which might not be in accordance with his way of thinking. Naturally, then, the young gardener feels a sense of his own importance when entering on to the duties of his first charge. He fancies that his opportunity has come, and sees the tide in its flood, which he hopes will lead on to fortune. But how much at that moment he needs a steady hand to guide him, perhaps he does not realise; for many a young gardener has lost his first appointment through his ambition carrying him roughshod over the guarding fence of discretion.

"Feel your way gently, my lad, and do not be in a hurry to turn the garden upside down; remember it is old, and you are new." This advice was given by an experienced practitioner to a young man who was about to leave him to take up his first charge as head gardener, and the soundness of it is obvious. He had trained many young men, and admitted that some of the most promising had disappointed him, not for want of ability or energy, but through good intentions being misunderstood, for the lack of discretion on their part. Employers and gardeners frequently look at matters from a different standpoint, and it is through their inability to see this that young men frequently err.



During **FIFTY-TWO YEARS** the "**JOURNAL OF HORTICULTURE**" has been written by Gardeners for Gardeners, and in its principles, its practice, and its price it still remains the same. One alteration is perhaps, however, necessary. Our modern methods of production have rendered the price old-fashioned, and hence in order to meet the wishes of the present generation of Gardeners the "**JOURNAL OF HORTICULTURE**" will hereafter be sold for **TWOPENCE** instead of Threepence.

Every man has, of course, a right to do what he likes with his own, and when a change becomes necessary, many gentlemen want the new gardener to take the place as it is. They may have a tender feeling for its ancient character, or there are perhaps a score of reasons why they should be averse to wholesale changes, and then, when the new gardener commences to agitate for this or that to be altered, he begins to wonder whether he has got the right man. Looking at it from the gardener's point of view, a different light is shed on the matter. The history and associations of the place make no appeals to him; he wants to acquit himself well as a cultivator, and to prove to his employer that he is master of his business. But the old way is not his way, and he seeks to change it. Perhaps it is new houses or fresh trees that he wants, or maybe something else; but his ideas are misunderstood, and he is, as it were, condemned without a trial. The old chief knew all about this sort of thing when giving the advice quoted, and had learned from a lifetime's experience of gardeners and employers the wisdom of feeling the way. He had felt the disappointment of entering a badly equipped establishment, but had shown his capabilities by making the best of things as they were, and having done that he had no difficulty in getting what changes he wanted.

Some years ago a young foreman left a well known fruit-growing establishment to take over a new charge, with the full intention of putting his knowledge of this branch into practice, and earn a reputation equal to that of his late chief. But circumstances alter cases, and, to use the words of the young gardener, "it nearly broke his heart." Doubtless he had visions of prizewinning Grapes before his eyes, but they vanished into nothing when he entered old-fashioned vineries, and saw ancient canes suffering through years of bad treatment. At once he advocated sweeping the whole lot away, and making a fresh start with young Vines. Doubtless it was the best course to suggest, but his new employer did not see things in that light; he had a tenderness for the old Vines, and wanted no changes in the architecture of the houses. Could not matters be improved a little as they were? The young man grasped the situation, and determined to make the best of it. He buried his high hopes reluctantly, and set to work. Ambition was there, also knowledge, and under his care the old Vines improved, so much so that his master caught the spirit, and began to show an interest in his garden that hitherto had rested dormant. Sentiment was lost in enthusiasm; if they could do so much with the old Vines what might they accomplish with young canes and new borders? And so the changes came about one by one, and the gardener enjoys the reputation he strived for, and by waiting his time, and making the best of existing circumstances, taught his employer the wisdom of his early suggestions.

There are hundreds of these old gardens in the country, that have been old for years, and in the eyes of the modern expert they are out of date. It is trying for the enthusiastic young gardener who takes charge of them, but those who pay the piper have the right to call the tune. Fresh, perhaps, from a wide field of labour, he sighs over his restricted opportunities, and fails to appreciate the charms of the old-fashioned garden. He points to the old fruit trees which adorn the walls, monuments of the skill of a past decade of growers, but ancient and worn out. In his eyes the fire heap is the best place for them, and perhaps the gardener is right, but his employer's sentiment prevents such a step. Looking at it from the latter's point of view we feel with him, and our sympathies are divided. Ancient Vines and Peach trees, antique greenhouses, and old-world appliances are a few of the matters which try the young gardener in the old garden, and he needs all his patience in making the best of them.

It must always be remembered, however, that gardeners are engaged for the garden, not *vice versa*, or things might be different, and because a man is not heard much of publicly, or does not figure in the exhibition lists, it is no reflection on his ability. He may be pursuing a successful course in a quiet sphere, and after all there is no more credit due to the man who does great things when he has every facility to aid him than there is to another who acquits himself creditably in a position where his scope is necessarily limited. A moral adorns the tale. In these days of keen competition, wise is the new

gardener who adapts himself to the old place, should he happen to fall into it, at any rate till he sees the opportunity which offers more scope for his energies.—G. H. H.

Planting Late Varieties of Apples,

And Keeping Them.

THERE is a general unanimity of opinion that a better supply of well-grown late English Apples is needed. From Christmas till May attractive-looking samples are readily disposed of at remunerative prices, and we have now many splendid varieties, which if planted and cultivated on intelligent lines may be kept fresh and plump till the spring months. Such varieties cost no more to grow than earlier ones, and as they blossom at a rather late period, there is less danger of spring frosts injuring them than in the case of early varieties. Intending planters should bear these points in mind, and depart somewhat from the beaten track. Were I forming fruit plantations on a large scale, two-thirds of the trees selected would consist of such fine late kinds as the following:—Dessert: Court Pendu Plat, Lord Burleigh, Rosemary Russet, Fearn's Pippin, Sturmer Pippin, Allen's Everlasting, and May Queen. Culinary: Newton Wonder, Bramley's Seedling, Lane's Prince Albert, and Chelmsford Wonder I would plant more largely than any others, because they are all of handsome appearance, and are fine bearers too. A few acres of suitable land planted with them would after five years bring in a rich harvest almost every year, and, taking the return obtained over a period of ten years, the venture should certainly not be regarded in the light of a speculation, but as one which would give a sure return for the labour and the expense entailed. A few other good varieties are Alfriston, Northern Greening, Sandringham, Calville Malingre, and Hambledon Deux Ans. The last named ought to be planted in elevated ground, where the wood would ripen well; and it needs plenty of room, either when grown as a large bush or standard.

In connection with the cultivation of late Apples—and indeed all other sorts—a matter of vital importance is to feed the trees liberally when they are well established and carrying heavy crops; by so doing the size of the fruits may be greatly increased, and the colour materially heightened. Apples possessing the dual good qualities of size and high colour command a remunerative price, when inferior samples, or those of only average merit, are either a drug in the market, or under the most favourable circumstances not a particularly profitable crop. When trees are bearing heavy crops there is scarcely any limit to the amount of feeding which may with advantage be given, and I am convinced that the British fruit grower will in the future devote far more attention to this matter than the majority have hitherto done, notwithstanding the fact that more attention has been paid to that point during recent years than was formerly the case. In addition to top-dressings of manure, basic slag and kainit, if applied in the autumn at the rate of 4 lbs. each per 40 square yards, will help to secure greatly improved results. When the fruit is set, 1 lb. of nitrate of soda per 40 yards, if given during showery weather, will also help the fruits to swell to a large size.

After good fruit has been grown it is a very easy matter to impair its keeping qualities as well as rob it of that juiciness and fine flavour for which well grown English Apples are noted—by storing in unsuitable positions, or in an improper manner. A dry airy shelf is the worst of all positions in which to store fruits with the object of keeping them for any length of time. Under such conditions shrivelling soon takes place, the juice vanishes in the form of evaporation, and leaves behind a dry and comparatively flavourless fruit. The essential point to observe in storing Apples and Pears is to place them where the temperature is as even as possible, and where frost can be kept out without resorting to artificial heat. A building with stout walls or boarded sides, thickly lined with straw, and having a thatched roof, generally answers as well as the most elaborately arranged fruit room.

When only small quantities have to be stored I have found no plan better than that of placing the fruit in barrels, standing these in a cool dark room or shed, and covering with mats or straw to exclude air. Apples so treated will come out as plump and crisp in March as they were when stored immediately after gathering, and if weighed will be found to have lost very little. On the other hand similar fruits stored at the same time in a drier room, or even in the same room and left exposed to light, will soon begin to shrivel, and if tested on the scales will sometimes be found to have lost one quarter of their original weight. Such loss represents not only a lessened value by weight, but what is more important still, a loss of those high qualities which should place the English Apple ahead of all others. Truly the question of storing fruit is one which deserves the earnest and thoughtful attention of all gardeners and fruit growers in Britain, where fruit growing is each year becoming a more important industry.—H. D.



Orchids of Small Stature.

SOME of the smallest species of Orchids are amongst the loveliest when closely looked into, and the majority are very interesting. Unfortunately they are as a rule difficult to cultivate, the reason being that being so small and containing so little stamina, as it were, they are very easily incommoded by slight checks. These may be occasioned by sudden or severe drops in the temperature, by a dry atmosphere, by too much moisture or too little, and therefore it may be taken as an axiom that the more regular the atmosphere and temperature is kept the better for them. This is in a measure true of all Orchids, small or large, but a stout growing *Cymbidium* or a *Phaius*, will stand with comparative impunity a check that would severely injure a growing plant of, say, *Ionopsis paniculata* or *Oncidium tetrapetalum*.



ZYGOPETALUM MAXILLARE.

For a rooting medium nothing seems so well suited to the requirements of these small growing species as a moderately large piece of Tree Fern stem. They are often established on these and sent home, and when they arrive in this way cultivators are wise who leave them on it and do not experiment with them much. The pretty *Zygopetalum maxillare* and its congener *Z. Gautieri* are never so much at home or so vigorous in any other way as on this material, the natural roughness of which forms just the right holding for their roots,

and retains moisture in sufficient bulk for and not in excess of their needs.

Keeping the foliage free of insects is another point of prime importance in the management of these weak growing species. Having in most instances no pseudo-bulbs or only very small ones, they have no stores of nutriment to provide for the loss of it that the presence of any insect entails, and a bad attack of scale is often fatal to their health. It is a case of keeping them healthy or not keeping them at all, they dwindle away very rapidly or else keep growing; there is no half measures with them.

Almost equally important is the grouping of the species in proper temperature. Take the pretty *Sophranitis violacea* for instance. This cannot be grown in the rough-and-tumble manner that its fellow species *S. grandiflora* can, simply because the latter has more bulk. Not that this is a giant by any means, nor so well fitted as others that may be mentioned, to rough it. Still it will grow in the coolest house; it thrives in a temperature slightly higher, and it will grow moderately well with the *Cattleyas*. It is not a fastidious plant, in fact. These few points, then, should be kept in mind by those who hope to shine in their culture, and although not by any means easy, it is quite possible to keep them alive and healthy for a number of years.

Cypripedium Gertrude Hollington.

WE can tell "Young Orchid Grower" that *C. Gertrude Hollington* was first exhibited early in the summer of 1895, when it attracted much attention and was greatly admired by both experts and visitors. Resulting from a cross between *C. ciliare* and *C. bellatulum*, both flower and plant partake of the character of each parent. The flower is broad and of stout texture, and should last for some considerable time after expansion. The dorsal sepal is white tinged with green and striped with dull red, while the pouch is of the latter colour and of medium size. The ground colour of the petals is a rather dirty white, and very heavily spotted with brownish red. They are broad, slightly drooping, and very substantial. This *Cypripedium* was exhibited by

Messrs. H. Low & Co., Clapton, and received a first-class certificate from the Orchid Committee of the Royal Horticultural Society.

Phaius grandifolius.

I NOTICED a really fine batch of this old Orchid recently, and I could not help thinking that if only half the attention that is bestowed upon other and far less worthy kinds were given it what a fine thing it would be. The plants referred to were grown by Mr. G. Neville, Lord Chesham's capable head gardener, at Latimer House, and as seen with the great spikes rising from the deep green, healthy foliage, they were very handsome. Mr. Neville believes in feeding rather liberally at the roots, and whatever may be the result as far as the eventual health of the plants is concerned they certainly like their quarters now.

Often one sees the leaf tips browned and partially decayed at the time the flower spikes open, but here the leaves are green and healthy, greatly adding to the appearance of the plants. *P. grandifolius* can be easily grown by anyone having a warm moist house at command. The plants may be potted in spring in a compost of peat, loam, and chopped moss, with plenty of rough lumps of charcoal and crocks. Usually the growths start so thickly as to need a little thinning, and in any case those left are more vigorous for this. It requires a very full water supply when both root and top growth is active and occasional supplies of weak liquid manure.

Zygopetalum leucochilum.

I was very pleased with this pretty hybrid, which Messrs. Veitch included in their interesting group at the Drill Hall on January 15th. It is a cross between *Z. Burkei* and *Z. Mackayi*; it has been exhibited before, but has improved considerably since then. The sepals and petals are greenish, spotted, mottled, and striped with brown. The lip is white, with bright bluish lines about the ruff. The plant exhibited was a fine one and carrying six flowers upon the spike, each bloom some 2 inches across. There is not a great deal of variety among the *Zygopetalums*, and we have room for all the hybrids we are likely to get in this section.

Phalænopsis.

Many growers as soon as the days begin to lengthen commence to pull their Orchids about generally at the roots, the Moth Orchids among the number. But these are far better left alone for some time, cold weather in March often greatly checking plants that have been disturbed at the roots. The conditions are not yet, nor will they be for a long time, favourable to active growth of root or foliage, and until this is the case the plants ought to be kept a little on the dry side, and left severely alone as far as interference with the roots is concerned.

Overpotting Odontoglossums.

There is great danger in overloading the roots of any Orchids with compost, and especially those popular species, *O. crispum* and its allies. All must be made firm in their pots, but this is easily done without putting 2 inches or 3 inches of solid peat that the roots can never find their way through. Far better to give too thin a compost and keep the atmosphere moist, for it is well known among Orchid collectors that rough winds in their native habitats bring down the plants owing to the slight hold they have on their host trees.—H. R. R.



CYPRIPEDIUM GERTRUDE HOLLINGTON.

FROGMORE, WHERE OUR QUEEN WILL REST.

AMONG the Crown lands sold after the Civil War was Frogmore, which came into the possession of George Fitzroy, Duke of Northumberland, whose widow, the Dowager Duchess, died here at a very advanced age. About 1748 Frogmore was purchased by Sir Edward Walpole, K.B., who made many improvements in the gardens, and to whom we are no doubt much indebted for the wealth of magnificent and interesting deciduous trees found therein. Queen Charlotte, Consort of George III., purchased the lease of Frogmore, when it became her Majesty's favourite residence, and subsequently that of her Royal Highness the Princess Augusta. Afterwards for many years her Royal Highness the Duchess of Kent resided here, and since her mother's death it was in the occupation of her late Majesty the Queen. Their Majesties King Edward the Seventh and the Queen Consort lived here for a short time, and this was the birthplace of their first-born child—the late Duke of Clarence, whose pathetic end is still fresh in our recollection. It was also the home of their Royal Highnesses Prince and Princess Christian before they took up their residence at Cumberland Lodge.

Entering the garden by the Queen's little gate (see plan on page 100), immediately on the left is the quaint and interesting old Dutch garden with its immense Yew hedges and beds of old-fashioned herbaceous plants, the whole kept as near as possible in the same fashion as it was in those far-off days of William and Mary. To the right lies the sheltered and cosy garden belonging to Frogmore Cottage. At a turn of the walk a few yards further we come upon a beautiful lawn, almost of an oval shape, bounded on three sides by a belt of high trees, giving one a momentary impression that we have the whole of the garden before us, so cleverly are the other portions hidden from view. In the centre of this lawn is a beautiful Indian marble kiosk, sent the late Queen by the first Governor-General of India, Lord Canning. To the right are the glass houses in which plants for the decoration of Frogmore House and gardens are grown, and in which, at the time of our visit, the bright and elegant old Begonia fuchsioides grew and flowered in great luxuriance over pillars and arches, bearing its beautiful coral-like heads of drooping flowers.

The Lake and Island.

Passing these houses, and skirting the belt of plantation to the right, we meet a charming panoramic view of a portion of the garden. Immediately in front extends a large, well-wooded island, and at its base a beautiful lake (see plan on page 100), which plays so important a part in the embellishment of these delightful grounds. Looking to the left along a portion of the lake the eye first rests on what appears a small Gothic ruin, nestling under the branches of an immense Cedar of Lebanon, and guarded in front by an equally ancient and noble giant Plane tree. Near this is a small rustic bridge, crossing a neck

of the lake, and over which hang caressing-like the drooping branches of a Babylonian Willow.

Glancing a little farther—still over the lake—the eye roams over another pleasant lawn, flanked on the right and left by high banks of Rhododendrons, Horse Chestnuts, several species of Laburnum, Bird Cherries, Thorns, Lilacs, and other flowering shrubs. On this lawn are growing many single specimen trees of great rarity and beauty, some of them perhaps the finest examples of the kind to be seen in any garden. Very conspicuous is an immense columnar exemplar of Libocedrus decurrens, 65 feet high, of great girth, a splendid specimen without fault or blemish. It was planted in 1857 by the Princess Hohenlohe.

Near this is a singularly fine example of the Maidenhair Tree (*Salisburia adiantifolia*). In form this may be said to be a blunt pyramid, 75 feet high, with a girth of stem 9 feet at three feet from the ground, and so heavy are some of its branches that they have been, for a long time, banded together to the trunk by chains for safety. Close by is a fine specimen of *Thuopsis borealis*, 36 feet high, and *Cupressus Lawsoniana*, upwards of 40 feet.

After viewing the left part of the garden, on turning to the right the eye of the spectator again encounters the placid waters of the lake nestling against the banks of the previously mentioned wooded island. Near the walk rises an immense tree of the Deciduous Cypress, measuring 75 feet high, its stem being clear of branches to the height of about 40 feet. A little farther to the left, on the bank of the lake, stands the best proportioned and finest-looking Cedar of Lebanon in the garden, although not the largest, and close by under the shade of this tree is a simple rustic summer house, surmounted with a thatched straw roof, promising a cool and restful spot for hot summer days.

The Royal Mausoleum and Memorial Trees.

Proceeding in the same direction we come to a piece of lawn, on the north-west side of which rises the Royal Mausoleum. Here are planted a large number of specimen coniferous and other trees by members of our own or other Royal

houses. *Abies Pattoniana*, one planted by her Majesty the Queen of Denmark in 1875; and another of the same variety by her Majesty the Empress of Germany in 1876; *Cedrus deodara*, a magnificent specimen, planted by H.R.H. the Duchess of Kent in 1850; *Cupressus funebris*, by Princess Adelaide of Hohenlohe in 1853; *Cedrus libani*, by H.R.H. Prince Christian in 1867; *Cupressus Lambertiana*, by H.R.H. the Prince of Wales in 1864; the same by his Majesty the King of the Belgians at the same time; and on the same date *Cupressus Lawsoniana*, by H.R.H. Princess Louise; and also on the same date *Cupressus Lawsoniana* was planted by H.R.H. Princess Beatrice.

Cedrus atlantica was planted by Prince Albert Victor of Wales in 1873; *Pinus pinsapo*, by their Royal Highnesses Prince and Princess Christian in 1867; *Picea lasiocarpa*, by Princess Thyra of Denmark in 1875; *Picea Nordmaniana*, by H.R.H. the Duchess of Edinburgh in 1874; *Quercus Suber* (Cork tree), by H.R.H. the Princess of Wales in 1873; the same by her Majesty the Queen of the Belgians at the same time; *Thuia*

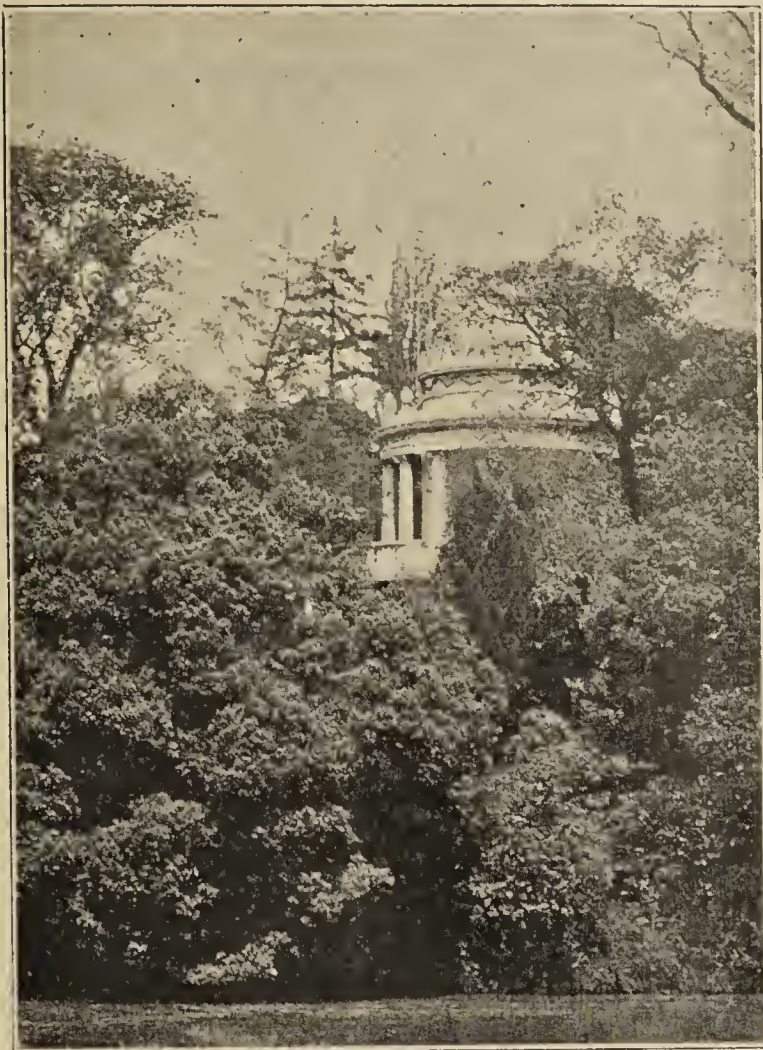


THE DUTCH GARDEN AT FROGMORE.

gigantea, by Princess Louise of Hesse in 1864; the same by Prince Louis at the same time; *Cupressus sempervirens stricta*, by the Queen in 1864; *Cupressus Lambertiana*, by Prince Arthur, 1864; *Thuia gigantea*, by Prince Leopold, 1864; *Sciadopitys verticillata*, by Princess Louise Margaret of Prussia; *Wellingtonia gigantea*, by Princess Hohenlohe, 1857; *Abies Albertiana*, by Princess Victoria and Elizabeth of Hesse, 1887.

Two trees of *Pinus Laricio*, brought by the Queen from Hyères, were planted by Princess Ena of Battenberg and Prince Alexander; *Pinus parviflora*, by H.R.H. Prince Henry of Battenberg, 1885; *Picea lasiocarpa*, by Princess Helen of Waldeck, 1882; *Picea cephalonica*, by the Duchess of Kent, 1851; *Quercus Ilex*, by her Majesty the Queen, 1864; the same variety by the Czarevitch (now Emperor of Russia), 1894; *Salisburia adiantifolia* (a cutting from the large tree previously mentioned), by her Grand Ducal Highness Princess Alice of Hesse (now Empress of Russia), at the same time; English Oak, planted by the Queen, June 20th, 1887, to commemorate her Majesty's Jubilee. Can elsewhere in the whole wide world be found such a collection of Royal memorial trees as this?

Nearer the Mausoleum are two handsome *Wellingtonias*, with a history of special interest. These trees were planted in the first instance in the grounds of the Royal Horticultural Society's Gardens at South Kensington, one by H. R. H. the Prince Consort on June 5th, 1861, on the occasion of the first opening of the garden, and the other by the Queen on June 24th in the same year—the year, it may be remarked, of the lamented death of Prince Albert. On December the 15th, 1869, they



THE DUCHESS OF KENT'S MAUSOLEUM.

were removed from South Kensington to Frogmore Gardens, and on the 17th were planted here by her Majesty near the Prince Consort's Mausoleum. One of the trees died in August, 1870, and another was planted in its place by the Queen in the December of the same year. The history of these two handsome and perfect trees is thus invested with a pathetic and interesting reminiscence of H.R.H. the Prince Consort, her late Majesty the Queen, and the Royal Horticultural Society.

Here in this grove of grand memorial Conifers our late Monarch has prepared her last resting-place. Here she has elected to sleep in symbolical seclusion beside him whom her soul so loved. Not "in the long-drawn aisle and fretted vault," where our other rulers lie, will posterity find the sarcophagus of Victoria and Albert, but amid the surroundings of those natural objects among which they sought pleasure together during their lives, and from which in death they are not divided. Two

days hence the thoughts of millions will be centred there.

The Duchess of Kent's Mausoleum.

Still proceeding on our way, we come to the main entrance gate leading to the Royal Mausoleum, and, turning to our left, we pass

through many of the previously mentioned Royal specimen trees, and under the branches of an immense Cedar of Lebanon. This tree has a straight trunk rising to the height of 80 feet, and nestling as it were against a portion of its branches is the Royal Mausoleum—a temple embalmed with ever sacred memories, at the portals of which as we pass by we can only pause for a moment with reverent feelings and respectful sympathy.

To the left we cross a little stone



THE ROYAL MAUSOLEUM AND MEMORIAL TREES.

bridge, from where we have a charming view of the lake, and immediately find ourselves on an island, a most secluded and quiet retreat, forming a sort of glade, with many single specimen trees of Wellingtonias, Libocedrus, Magnolias, and Sweet Chestnuts, the whole banked round its boundary on three sides by Rhododendrons, and on one side by the lake. Still proceeding we come to another bridge taking us from the island towards the beautiful mausoleum of H.R.H. the Duchess of Kent, the Queen's mother. This stands on a high elevation embowered in many trees of luxuriant growth.

Frogmore House.

Again passing, by a circuitous route, along a walk to the right hand, having the high mound on which the Mausoleum is built to our left, and the lake to our right, we arrive at another cosy summer-house, and immediately afterwards we stand before the west front of Frogmore House, a homely, comfortable, unpretentious, English-looking structure, the exterior being painted a light grey colour. In front of the mansion a splendid general view is obtained of the grounds, the lake, and the park beyond. A smooth soft lawn, of considerable extent, gently slopes down to the lake side, and the lake here seems to fold in its embrace, as it were, a richly wooded promontory. On the left it is spanned by an artistic iron bridge, and on the right it seems to lose itself behind the leafy mound of the Duchess of Kent's mausoleum. Still to the right we have one of the beautiful lawns previously mentioned, with its unique specimen trees and beds for spring and summer plants. On the left are some glorious deciduous trees, under which, when in the full beauty of their leafage, can be seen her Majesty's tea rooms. At this point, too, we have a glorious view of Windsor Great Park and its giant forest trees.

The Queen's Tea Rooms.

Here, at the south-west corner of the house, is a simple little flower garden on the turf, and which in spring and summer is planted with bright flowers. Very few of what are called summer bedding plants are grown at Frogmore House. With such wealth of flowering trees, shrubs, and herbaceous plants, it is almost unnecessary. Now let us leave the walk and cross over the lawn under the shade of some giant Elms and Beeches in the direction of the late Queen's tea rooms. It is from here that the view representing the tea rooms has been obtained, also the first view of the two veteran Evergreen Oaks, said to date back to the time of the Crusaders (see pages 100 and 101).

These are magnificent trees, which from the distance appear united, the circumference of their branches measuring upwards of 100 yards. They are in perfect health, and it is underneath

these two old veteran Oaks that her Majesty frequently used to take breakfast and tea in the summer time. It is in truth a charming spot, destined to become historical.

Thus comes to an end a mere glimpse of this delightful garden. We do not know what in it to admire the most—whether the magnificent forest trees or the glorious collection of flowering trees and shrubs, and the specimen Coniferae, the lawns, the lake, or the exquisite way in which this 36 acres of garden is laid out and the perfection of order in which it is kept. It is not any one of these, but the "perfect whole," forming as it does in harmonious beauty the most lovely, peaceful, and restful of gardens, the fitting cemetery of an Empress Queen.—P. A. X.

Queen Victoria at Balmoral.

Nowhere will our departed Queen be more missed than at Balmoral, which I had the privilege of visiting on behalf of the Journal in the year of the Diamond Jubilee. One had read and heard much of the respectful affection with which her Majesty was viewed by those about her in her Highland home, but it took a personal visit to enable one to realise its depth and sincerity. I confess that it gave me a higher idea than ever before of the truly noble character of her who has been taken from her mourning people. That this deep reverence and regard was amply justified could easily be seen in the course of the conversation that one had with those about her at Balmoral; conversation, too, in which there was no opportunity for anything but sincere speech on the part of those one talked with. One heard of the steady, unwavering course of kindness and true courtesy to all. In little things, as well as in great, this was ever shown, and in none more than in her Majesty's commands that she should be kept informed when away of the welfare of the sick and ailing in whom she was interested, and this meant all round Balmoral. Another thing which struck home to one who has seen many fine gardens in his time, was the simplicity of her Majesty's tastes. She did not like many changes, and loved the simple fragrant flowers of which we never grow weary when others pall upon us. We are told that among the flowers which encircled her mortal remains when they lay at Osborne was the sweet and lovely Lily of the Valley. This was one of the Queen's favourite flowers, and was largely grown at Balmoral. It was a fitting blossom to place by the side of one who ever bore about with her "the white flower of a blameless life," and who, though gone from her people, has left behind sweet memories of kindly deeds which shall surely teach them that her greatness consisted not in her station alone, but in that devotion to duty and that thoughtfulness which characterised our Queen's thoughts and actions.—S. ARNOTT.

Propagation of Pansies.

WHEN one has a good collection of these beautiful flowers it is worth while keeping it. If the seed is saved probably less than half the resulting plants will be as good as the original stock, as the tendency to degeneration in Pansies is very strong, especially if there are any inferior ones near those from which the seed is saved. If, on the other hand, we leave the old plants for another season the blooms usually get smaller, and the plants out of shape. The best way to perpetuate a good stock is undoubtedly by division.

This is best done in February or early in March, according to the season, but the earlier the better. The old plants should be lifted, and all the flower-bearing stems of last year cut off, when there will remain a number of fresh, young shoots from the roots, short and sturdy. The roots or crowns should be cut up with a sharp knife in such a way as to get the shortest and sturdiest pieces with roots on. If each piece of root has two or three shoots so much the better. The ground having been deeply dug and richly manured, in a moist and fairly shady place if possible, the divisions should be put in with a dibbler, and watered without a rose to settle the soil round the roots. They should be planted so that half an inch of the stem or stems previously above the surface is now below it, as this part quickly sends out roots, and it gives a sturdier appearance to the plants. They

will get tall after they have bloomed a month or two, when they can either have short sticks put to them or be allowed to trail upon the ground. If they are planted just behind an edging of spring bulbs they will be useful to cover over the space when these have disappeared.

Pansies grown in this way do not make such bushy plants as seedlings, but the method has this recommendation—you know what you have got. I have kept the same stock for years in this way, and have had the plants in bloom from May till February, when I divided them again; this, of course, in an open winter.

Another method of propagation which has the disadvantage of spoiling the summer's bloom, though resulting in better shaped plants, is to select, when the plants are well in bloom, those which it is desired to perpetuate, and peg down the shoots or stems, so as to leave the crowns of the plants exposed, all the bloom buds being picked off as they appear. Leaf mould should be applied round the roots, and when young shoots arise from them they should be taken off when half an inch high, and put in small pots with plenty of sand and leaf mould. If these are placed in a cold frame they will soon be well rooted, and if it is not convenient to plant them straight away where they are wanted to bloom next spring, the pots can be sunk in the soil in a shady place, where they will only need watering in very dry weather. They can afterwards be planted in their final position in time to get established before the winter sets in.—A. PETTS.

NOTES

NOTICES

Recent Weather in London.—A heavy gale passed over the metropolis on Sunday, bringing in its train intermittent downpours of rain and storms of hail. On Monday it was cold and wet in the morning, but the sun shone later. About four o'clock snow fell for a short time, and was followed by rain; the evening was fine. Tuesday and Wednesday opened with sharp frosts.

Brockwell Park Extension Scheme.—The scheme to secure an additional 43 acres to Brockwell Park, Herne Hill, is making satisfactory progress. £63,350 out of the £66,700 has been secured from various public bodies and private donors by the local committee, having for its chairman Mr. C. E. Tritton, M.P.; vice-chairman, Alderman S. H. Candler; treasurer, Mr. W. B. Doubleday, 123, Tulse Hill; and Mr. Albert Larking as hon. secretary. The provisional contract for the purchase was signed some weeks ago, and an order has now been made by the Chancery Division of the High Court of Justice confirming it.

Metropolitan Parks and Gardens.—We learn that the income of the Metropolitan Public Gardens Association for last year, the eighteenth of its existence, was £4400. The expenditure was £4200, to which must be added a considerable sum for liabilities in connection with work in hand. Trees are to be planted at a site in Drury Lane, in West Cromwell Road, and in White Hart Square. Trees are also to be offered for a strip of waste land in King's Road, Hammersmith, and to grant seats for the Home Fields Ground, Chiswick. The association has, says a contemporary, accomplished so much useful work that we trust its efforts to beautify the metropolis will not be checked from insufficient support.

Royal Gardeners' Orphan Fund.—Mr. Wynne, the secretary of this institution, informs us that the annual general meeting of the subscribers will be held at the Essex Hall, Essex Street, Strand, London, W.C., on Friday, February 15th, 1901, for the purpose of receiving the report of the committee and statement of accounts for the past year, to elect officers for the ensuing year, to elect twelve children to the benefits of the fund, and to transact such other business as may arise. The chair will be taken at 3 P.M., and the poll will close at 4.30 P.M., after which time no votes can be received. All persons becoming subscribers before the day of election will be entitled to vote on that day, but no person can vote whose subscription for 1900 is unpaid.

In the Markets.—There is an enormous quantity of Tomatoes now in the markets. So plentiful are they that costers can afford to convey them to outlying suburbs of the metropolis and sell them as low as 2d. and 3d. per pound, a price probably unprecedented at this season of the year. With the exception of Cauliflower, which continues rather dear, vegetables have fallen to normal prices. Cabbage, Savoy, Sprouts, Lettuce, Endive, and Celery are all fairly cheap. New Potatoes are selling in some places at as little as 3d. a pound, Tomatoes about 6d., Spanish Asparagus 3s. a bundle; Paris Green 5s.; Spruce 1s. Oranges of several kinds are very cheap, Lemons two a penny, Brazil Nuts 8d. a pound, shelled Barcelonas 10d., Chestnuts from 2d. to 4d., English Grapes from 1s. upward.

Prescot Horticultural Society.—Mr. Norris Mercer presided at the annual meeting held on 23rd inst. The report stated that the summer show was attended by over 3000 people. The entries numbered 630, as against 555 in the previous season, whilst the increase in cottagers' exhibits was fifty-six, the competition in every class being very keen. The classes for Sweet Peas had proved a huge success, as had also the trade exhibits. The working committee are during the winter organising entertainments for increasing their funds, of which the last realised £11 6s. 5d. The present balance in hand amounts to £37 3s. 8d. Mr. Norris Mercer was elected president, Mr. Taylor treasurer, and Mr. W. Case secretary. It is proposed to hold a summer show early in July, and for the first time a Chrysanthemum show in November. Lord Derby has again kindly placed a portion of his park at the Committee's disposal.—R. P. R.

Gardening Appointments.—Mr. Wm. Smith, for the past seven years head gardener at Mount Cross, Bramley, Leeds, has been appointed head gardener to Briggs Priestly, Esq., Ferncliffe, Apperly Bridge, Bradford. Mr. J. D. Atkinson, late foreman at Willington Hall, Tarporley, has been appointed and taken up his duties as head gardener to Lord Ashbrook, Durrow Castle, Queen's County, Ireland.

Tobacco Culture in Greece.—The "Levant Herald" states that, encouraged by the success with which Kavalla tobacco has been grown in Greece, the Hellenic Government has decided to devote special attention to the extension of Tobacco culture in the country. With this object large quantities of seed will be procured, not only from Kavalla, but also from Trebizond, Havanna, and Maryland, and experts will be engaged to teach Greek agriculturists the best methods of cultivation.

Historic Estate.—Cobham Hall, Kent, the Earl of Darnley's well-known domain, is to be let furnished, with the shooting over the estate of 8000 acres. Cobham Hall is a noble example of a red-brick Elizabethan mansion, standing in a magnificent deer park some seven miles in circumference. It has been favoured with visits by the Queen, who stayed there when a little girl with the Duchess of Kent, by Charles I., and by Queen Elizabeth, who was entertained by William Brooke Lord Cobham, after whom a room is named. The shootings are chiefly famous for the extent of the coverts and for the wildfowl preserves, and the woods and park are said to contain a collection of forest and flowering trees and shrubs second only to those at Windsor Forest.

Croham Hurst Preservation.—The Croydon County Council has decided by a unanimous vote, to purchase the whole of the beautiful, wooded hill to the south of Croydon known as Croham Hurst. Two years since successful negotiations resulted in the acquisition of 35 acres, and public attention was aroused to the fact that the loveliest portion of all, the remaining 45 acres, was threatened with spoliation by the builders. As a result of an open-air meeting on the top of the Hurst on January 22nd, 1899, an influential committee of seventy members was formed to request that the whole 80 acres might be devoted to the use of the public for ever. This object has now been achieved, inasmuch as the Council has decided to offer the sum of £15,000 for the remaining 45 acres.

The King as a Gardener.—When the King and the Duke of Edinburgh were little boys they were very keen gardeners. The boys at the Queen's School in Windsor Park had to cultivate a 3-acre plot as part of their school training. One morning the Queen and the Prince Consort paid a surprise visit to inspect the work of the youthful gardeners in the school plot. After a tour round a portion of the 3 acres, Mr. Horner, the head master, was commanded to walk with the Queen and the Princes, and for twenty minutes had to answer questions and listen to the young Princes' criticisms and comments. "You know, Mr. Horner," said the future Edward VII., "we both have gardens of our own, which we look after ourselves, and all the vegetables we grow we are allowed to give away to poor people." Mr. Horner, who now lives, hale and hearty, at Shepton Mallet, is fond of recalling the youthful gardening enthusiasm of the King.

The Alexandra Palace.—Colonel Marsh, C.E., yesterday held a Local Government Board inquiry into the application of the Hornsey, Tottenham, and Wood Green District Councils, for permission to borrow £65,620 in addition to the £75,000 which the Alexandra Palace Acquisition Act gives them power to provide without the sanction of the board. The trustees were represented by Mr. Henry Burt, their hon. sec., and the details were explained by Mr. F. D. Askey, the clerk to the Hornsey Council. The Tottenham Ratepayers' Association opposed, urging that the ratepayers had not been asked about this proposed loan, and that the amount which the Act allowed them to raise ought to be the maximum, especially seeing that the Tottenham people would not be in a position to make use of the Palace. The association pointed out that the trustees were desirous of adding to the park the boating lake and some additional land at a cost of £11,000, and this they had always understood to be included in the original purchase scheme. Colonel Marsh pointed out that the district council was the proper authority to deal with such matters, and that body had decided to assist the scheme by contributing this amount. Colonel Marsh's report will be submitted at once, as the money has to be paid over next week.

Devon and Exeter Gardeners' Association.—The following programme has been arranged for the spring session of the Devon and Exeter Gardeners' Association:—January 30th, Mr. John Curtis (gardener to Sir Thomas Acland), "Greenhouse Hardwooded Plants;" February 13th, Mr. W. H. Bater (gardener to Lady Duckworth), "Notes on the Growing of the best dozen kinds of Vegetables for Exhibition;" February 27th, Mr. F. J. Fletcher (gardener to Colonel Halford Thompson, J.P.), "Hardy Fruit Growing for Devonshire;" March 13th, Mr. James Mayne (gardener to the Hon. Mark Rolle), "Methods of Propagation;" March 27th, Mr. H. W. Hodder (gardener to Mrs. Trevor Barclay, Torquay), "Is Gardening a Science;" April 10th, Mr. G. H. Head (assistant gardener at Poltimore Park), "The Treatment of Cool Orchids."

Manchester Royal Botanical Society.—The council of the Royal Botanical and Horticultural Society of Manchester and the Northern Counties have issued their report. The council say that when the fact is taken into consideration that for the last twelve years the society has had a loss, varying annually from £500 to nearly £1600, the result of the past year cannot be regarded otherwise than with satisfaction, the financial statement showing a surplus of £184 10s. Another satisfactory feature of the report is the increase in the annual subscriptions. By a sale of land to the Deaf and Dumb Institution the society's liabilities have been reduced by £2856, less law charges. As a result of the sale of Trafford Park to the Trafford Park Estates Company, Limited, there has been a release from the burden of certain covenants. When this time comes the benefit of the arrangements referred to will be felt. In the coming year a large amount of money will be needed for the renovation and decoration of many of the plant houses, and the council appeal with confidence to the public to support them by liberal donations to a fund which will be opened for this object. It is the intention of the council in the coming spring to inaugurate a Daffodil exhibition on a large scale at St. James's Hall.

Shirley Gardeners.—The association held a meeting at the Parish Room, on Monday, 21st inst., Mr. B. Ladhams in the chair, when the Rev. H. S. Gorham, F.Z.I., The Chestnuts, Shirley Warren, gave a very interesting lecture on "Insects Injurious to Garden Plants and Fruit Trees." Mr. Gorham divided insects broadly under the two tribes of those which bite with jaws, such as beetles and grasshoppers, and those which inserted a tube and sucked their food, as with bees, moths, and butterflies, though there were some of the bee tribe which bite and sting. Mr. Gorham has made a great study of entomology, and particularly of beetles, of which he had an almost incredible number of specimens. He touched upon the Potato beetle, of which fears were entertained that it might be imported from America. An enactment prohibited specimens being sent to this country, but entomologists knew there was no chance of it getting a hold here, as our climate would not suit it; indeed he could hardly think of an instance of a beetle imported from another continent ever finding a comfortable home in England. He strongly pleaded the cause of the small birds, saying that often in taking a few buds it was only to get at the larvæ which it contained. Major Douglas, R.E., proposed a hearty vote of thanks to the lecturer. The next lecture will be given by A. Dean, Esq., F.R.H.S., on "The Cultivation of Potatoes."—J. M.

Reading and District Mutual Improvement Society.—The fortnightly meeting of the Reading and District Gardeners' Mutual Improvement Association was held in the Club Room, Old Abbey Restaurant, on Monday evening last, and was well attended. Mr. Leonard G. Sutton, the president, occupied the chair, and in opening referred to the great loss the country had sustained by the death of our beloved Queen. The subject which had been arranged for the evening was "Garden Roses," by Mr. G. Gordon, V.M.H., but owing to the sad bereavement Mr. Gordon had sustained, this lecture was postponed, and the evening devoted to impromptu speaking on the following:—Tomatoes (Mr. C. P. Cretchley, The Honey's Gardens, Twyford), Melons (Mr. W. Barnes, Bearwood Gardens), Raspberries (Mr. Moody, Reading), Potatoes for early use (Mr. F. Wilson, The Gardens, Lower Redlands, Reading), Zinnias (Mr. E. Fry, The Gardens, Greenlands, Reading), Freesias (Mr. R. Chamberlain, Cressingham Gardens). A great many questions were asked, and an interesting discussion followed each subject, in which the following took part:—Messrs. Wicks, Exler, Ager, W. Smith, Neve, Pigg, Tufnall, E. J. Dore, Townsend, Lever, Farey, Butcher, Hinton, G. Smith, Turner, and D. Dore. Exhibits were staged by Mr. W. Townsend, Sandhurst Lodge, and Mr. E. S. Pigg of Samoa Gardens.

Liverpool Horticultural Association.—On Saturday evening Mr. T. Foster presided at the annual meeting, held in the Secretary's office, 7, Victoria Street, Liverpool. The balance-sheet showed that over the spring show there was a loss of £123 7s. 3d., also a loss of £97 5s. 9d. at the recent Chrysanthemum Society. Notwithstanding this, as the subscription list amounted to £355, the association was left with a more than creditable balance of £150 8s. The committee were then elected. It was decided to hold a spring show in St. George's Hall in March, and a Fruit and Chrysanthemum show in November. Mr. Harold Sadler was again elected as secretary, and the Lord Mayor was elected president. It is hoped that a successful year will ensue.

Leicestershire Chrysanthemum Society.—The annual general meeting of this society was held at the Victoria Coffee House, Leicester, on January 22nd. The president (Alderman Collins) was in the chair. The hon. secretary, Mr. R. G. Lawson, submitted the committee's report, congratulating the society upon its present satisfactory position. The monetary statement showed the society to be in a sound financial condition, a balance of £61 18s. 10d. being reported. Alderman Collins moved the adoption of the report. The secretary afterwards gave a short account of the financial history of the society from its formation in 1887, causing considerable amusement by the statement that the first annual meeting was held in a boathouse near the River Soar on a Sunday morning. The chairman, on behalf of the society, afterwards presented Mr. Lawson with a silver watch in recognition of his valuable services.

Loughborough (Leicester) Gardeners' Association.—The Loughborough and District Gardeners' Mutual Improvement Association held their fortnightly meeting in the Co-operative Room, Wood Gate, on Tuesday evening. There was a large attendance of members, presided over by Mr. J. Lane (vice-chairman of the association). The essayist, Mr. A. McVinish, gardener to Mrs. Perry Herrick, Bean Manor, read an exhaustive paper upon "The Cultivation of Vegetables," the process of sowing and the subsequent management of the various crops being ably and clearly explained. Knowing the high position the essayist has taken as an exhibitor of vegetables at the Leicester and other shows, his remarks were much appreciated by all present. The usual discussion followed the reading of the paper. A hearty vote of thanks was accorded the essayist and chairman.

National Chrysanthemum Society.—The annual general meeting of the members of the above society will take place at Carr's Restaurant, 265, Strand, W.C., on Monday, February 4th next, at seven o'clock in the evening. Mr. Chas. E. Shea, vice-president, will occupy the chair. The business will be to receive the committee's annual report and balance sheet; to elect a president, vice-presidents, officers, and one-third of the committee for the year ensuing; to consider certain alterations and amendments to the rules; and to transact such business as pertains to the annual general meeting. The chief of the proposed alterations and amendments to rules relates to the election of Fellows. It is proposed that the last three lines read:—"Candidates for honorary fellowships must be nominated by the executive committee, and their election shall take place at a general meeting of the society."

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1900.										
January.										
Sunday .. 20	W.S.W.	deg. 44.6	deg. 43.4	deg. 50.6	deg. 38.6	ins. —	deg. 41.4	deg. 42.9	deg. 45.3	deg. 31.2
Monday .. 21	S.S.W.	48.8	46.8	52.9	39.0	—	42.7	43.2	45.3	34.0
Tuesday .. 22	S.W.	48.2	46.0	50.3	47.8	—	44.4	43.8	45.5	45.5
Wed'sday 23	N.E.	31.6	31.2	45.0	30.5	—	43.7	44.4	45.5	22.0
Thursday 24	S.S.E.	42.8	41.8	47.5	31.0	0.05	42.4	44.1	45.6	24.6
Friday .. 25	W.S.W.	40.2	37.0	47.7	37.3	0.10	42.6	44.0	45.8	28.8
Saturday 26	W.N.W.	39.9	36.5	52.1	37.6	0.01	41.8	44.0	45.8	30.5
MEANS ..		42.3	40.4	49.4	37.4	Total 0.16	42.7	43.8	45.5	30.9

The weather has been very dull during the past week, the latter part being remarkable for strong cold wind and frequent showers.



A Variegated *Latania rotundifolia*.

GLANCING over your Gleanings column in the Journal, dated 3rd January, I notice that a variegated sport from *Livistona rotundifolia* had been discovered in India. Now I could not agree that it was the first discovery of such a plant, as there is to be found in the gardens of Col. R. G. Sharman Crawford, Crawfordsburn, co. Down, a specimen plant of a variegated *Latania* (*Livistona*) *rotundifolia* bearing at present twelve leaves, measuring at least $3\frac{1}{2}$ to 4 feet across the centre. Each leaf is distinctly marked with creamy white stripes, equal to those usually found in *Pandanus javanicus*. The plant I should assume to be about ten years old, and it has been in Crawfordsburn for the past four years. It was procured from Messrs. A. Dickson & Sons, Newtownards, where, I believe, it was raised from seed. If this comes before the notice of Messrs. Dickson & Sons, perhaps they will be able to throw some light on what I should call, until disputed, the first variegated form of the *Latania* family.—J. PRYDE.

Apple Lane's Prince Albert.

THE article by "W.," page 59, will erroneously convey a wrong impression to intending planters of this variety, as no one likes to plant trees that are bad growers, whatever other good qualities they possess, especially so if profit is the object. We have some three dozen trees of it, which are all that can be desired, both with regard to growing and fruiting, and if they do not have a heavy crop this year they will have to be lifted to keep them within bounds. It is one of the few varieties in which the shoots can be left any length and be sure of blossom buds forming all the length, whereas in many varieties when left only a few buds at the apex are changed into blossom buds. The trees here are budded on the Crab stock, and both the roots and the heads were well pruned at planting time. "W.'s" trees must be on the Paradise, I think, to have made such a poor growth, for this stock is essentially a fruit bud producer, for when the new growth on the tree is arrested in any manner, that shoot will be bristling with fruit buds in the autumn. If "W." is at all serious about picking off the fruit next spring, I should let that seriousness have its turn now, instead of waiting till spring, by cutting off all the fruit spurs and buds that can be done without permanent injury to the tree, and the energy that would have gone towards the sustenance of the bloom will go to make wood instead.—F. K. D., Cheshire.

Women as Gardeners.

WHETHER a college or hostel for women gardeners is an institution destined to have a long and useful existence, of course remain to be proved by time and experience. It is worthy of note that a preponderance of opinion is against the new move. "E. D. S." reviews the institution with greater favour than many previous contributors who have given their vote. He says, "Capable women would soon learn, if they had not already learnt, how to pot young *Chrysanthemum* plants, Tomatoes, and seedlings of various descriptions," also sowing seeds, thinning Grapes, disbudding Peaches, thinning the fruit, and pricking out seedlings. All this may be more or less true in theory, but in practice it may work out differently. At any rate, as a gardener I should certainly oppose most strongly the introduction of young women into any garden where young journeymen gardeners were also employed, for I am quite sure such mixed labour would not work out satisfactorily. There are many gardens in which the staff is a limited one, and altogether out of proportion to the amount of work to be done, and in such cases I would ask, Where is the economy of lady helps? The employment of lady gardeners is a luxury admissible only to the estate that can afford extras, and where the staff is an extensive one.

I have always felt sorry when I have seen women of the labouring class working in the open garden in cold wet weather, but of late years female labour has been largely dispensed with. I do not think we are likely in this, the twentieth century, to see women doing heavy digging, wheeling, and mowing; but I am willing to admit that the garden woman is a most useful member of a garden staff in her proper place. The bothy is devoid of comfort and pleasure when there is no woman in charge. The flower work of the house, table decorating and

such-like, may be handed over to lady gardeners perhaps with some advantage; but even this is usually associated with some other important work dischargeable by intelligent men. I am of the opinion that the education of lady gardeners is not calculated to disturb to any appreciable extent the labour market, and to expect that two years' tuition is a sufficient store of knowledge to embark on gardening as a profession is to my mind incomprehensible. As to Grape thinning, Peach tying, and kindred work, where is the gain of mixed labour? and how unsuited is the conditions for women? There seems a tendency among ambitious women of the present day to ascend into the higher scale, and take up work which, from ages past, has been carried on by male practitioners, notably in medicine, law, and gardening. Female help is, as "E. D. S." truly says, when of the right kind invaluable; but I cannot agree with him in defining it as being the pruning of wall and bush trees, planting, and such like work. I have yet to learn that market growers adopt women labour for this class of employment. "What they can do" is florists' work, and this much better than garden drudgery.—R. A.

The Chairmanship of the Fruit Committee.

FOR weeks past almost every gardening paper has had paragraphs, which conclude with the signature "A. D.," anent the nurseryman, and his unfitness to sit as a member of any committee of the R.H.S. First it was the Fruit Committee, and how every nurseryman should be banished from this body, because, being in trade, they could not possibly have a mind open to fair judgment! We will not say anything about those members of this despised body who have sat on the Fruit Committee for twenty years, often attending in the busy season at great inconvenience and loss, paying their own expenses and without reward (saving a luncheon once a year), and some of whom are not even exhibitors. No, we will let their services speak for themselves. Again, we will not say anything about the propriety, or otherwise, of these insinuations emanating from a member of this very committee, who, had he the *slightest* ground for his remarks, has the most ample opportunity of bringing his grievance before his own committee instead of trying to make belief that he is washing dirty linen in public. Nor, lastly, will we say anything of the sense of fitness which permits the editors of these papers to insert the paragraphs referred to unless they think that there is cause of complaint against the trade in these matters. All this everyone can form his own judgment upon.

But we would ask—in heaven's name where would the committee get to without these nurserymen? Amateurs and gardeners may and do know much, and may even, each in his way, surpass the nurseryman in some branch of horticultural knowledge, but for a general all-round grasp of the subject, commend us to the man who gains his living by cultivating fruit trees, and who is daily in touch with these matters and consulted in all difficulties, so that he is armed with the experience of others as well as his own. But what, we ask, happens when committees meet without nurserymen? Well, they give certificates to "Early Favourite" Plum, which, any nurseryman could have told them, had been out for forty years, and which fruits on the average twice during that time. There, we will say no more upon this point.

Next, our friend, whose initials should surely have "C. R. I." between them, runs amok upon the Floral Committee, and explains why those rascally nurserymen are unfitted to judge or vote upon the merits of a Dahlia, and now he turns his attention to the members of the council and shows that, with one exception—how kind of him to grant even this—there is no one on the council who is fit to be the chairman of the Fruit Committee, and he suggests that the Fellows should select some members who *are* fit for the post and put them in at the general meeting next month. We do not know if "A. D." is aspiring to be elected, but we should scarcely think so, as, if he is not actually a member of the trade himself, his family connections in the business would almost render him unfit, from his own point of view. Anyway, we think those members of the maligned body of men known as nurserymen, who are Fellows of the R.H.S., should endeavour to be present at the annual general meeting and see what is going on.—NURSERYMAN.

Onions as a Rival to the Aneroid.—In some country households there are to be seen at the present time twelve large Onions placed in a row, with a pinch of salt on the top of each. What mission have these odoriferous roots to perform? They are there, the "Agricultural World" explains, as weather prophets. The Onions were set in position on Christmas Day. They will be kept on guard until Twelfth Night. Then the believer in their prophetic office will examine them with scrupulous care. On some Onions the salt will have melted; on others it will have remained dry. Each Onion represents a month. A rainy month is indicated where the salt has melted, and a dry month where it has kept intact.

Moor Hall, Cookham.

THE residence of F. D. Lambert, Esq., J.P., is one of the prettiest places on the Berks side of the River Thames, which runs to the right of Moor Hall, going from Maidenhead to Cookham, a distance of about three miles. On the other side of the river is Cliveden, with its lovely woods, which in the summer time forms a great attraction for river parties from all parts of the kingdom. The house is a modern brick villa-mansion, surrounded with its own grounds, and covered with climbers and creepers on one side. Passing round from the entrance we come to the conservatory, a well-built structure with centre bed and side stages, well adapted for all kinds of plants. At the time of our visit it was very gay with flowering plants. The centre bed was filled with two large specimen Kentias and well-grown plants of *Campanula pyramidalis* and *C. p. alba*, standing about 8 feet in height, and from six to twelve spikes on a plant. On the side stages Maiden-

grounds to enter the gardens proper the path lies past two walls, one devoted to Tea Roses, and the other to cordon Pears and Plum trees, the latter of which were carrying immense crops of fruit. Beneath the border of the wall bearing the Tea Roses *Mignonette* grew, with *Salpiglossis* dotted out among it, each plant being neatly staked.

The first range of three houses we entered are of the lean-to type. The first was filled with Carnations, in three varieties—viz., *Uriah Pike*, *Miss Jolliffe*, and *Germania*, this variety being very fine; all are grown in 48's, carrying from six to twelve blooms each, of good size and colour, and on looking up baskets of *Begonia Gloire de Lorraine* were seen in full bloom depending from the roof. The middle house contained a small collection of *Caladiums*, which are arranged on a low stage, so that visitors look down upon them in passing through, whereby their fine ornamental foliage is displayed to the best advantage. These also are grown in 48's, and for size of pot are excellent. Notable among these was one leaf of *Daphne*, measuring 21 inches in length and 18 inches in width. Other fine varieties were *Ladas*, *Madame J. B. Box*,



MOOR HALL—THE STOVE.

hair Ferns formed the groundwork, with excellent plants of *Humea elegans*, *L. Harrii*, *Francoa ramosa*, *Clerodendron fallax* (these being exceedingly showy), and *Coleus* dotted in among them; while beneath the side stages *Selaginella* grew abundantly.

On emerging from the conservatory the pleasure grounds appear extending around, and though not cast upon a large scale, are exceedingly pretty. A small herbaceous border runs on one side, containing a suitable collection of plants, of which one of the chief features was a large specimen of *Bocconia cordata* in full beauty. From the side of the house leading on to the lawn are large terra cotta vases, then filled with *Petunias* and *Madame Crousse* Ivy-leaf. In the flower beds well known bedding "Geraniums" flourished conspicuously, and two basket beds formed with Ivy, containing the one *Olive Carr*, and the other *Waltham Seedling*, formed showy objects. Here the eye was caught by a very pleasing border on the garden side of the lawn, composed of the following plants in the following order:—1st row, *Pyrethrum Golden Ball*; 2nd, *Coleus Verschaffelti*; 3rd, "Geranium," variety unknown; 4th, *Ageratum*; 5th, *Vesuvius* "Geranium," with a background of flowering and evergreen shrubs. One corner of the grounds boasted of a small Rose garden, in which the trees were making fine healthy wood since the recent rains. On passing from the pleasure

Reine de Danmark, *Princess Royal*, *Rose Laing*, and *Sir W. Broadbent*. In the end house a collection of Orchids is gradually being accumulated, consisting chiefly of *Cattleyas*, *Cypripediums*, and *Oncidiums*. We noticed a fine piece of *Cattleya Mossiae* in flower, also *Oncidium curtum*, *O. flexuosum*, and *O. sarcodes*, the last carrying a spike 48 inches in length. Two span-roofs are devoted to Cucumbers and Tomatoes, Sutton's Matchless and Al Cucumbers being the varieties grown, and Sutton's Perfection Tomato, which were laden with beautiful shaped fruit.

Coming to the stove, which is a large span-roof house, the centre bed is filled with excellent grown specimens of *Panax Victoriae*, *Pandanus Veitchi*, *Dracenas A. Laing*, *Lord Roberts*, and *Lord Wolseley*; these are magnificent. The *Crotons* are equally good, the best being *elegantissimus*, *interruptus*, *Laingi*, *Mrs. Bause*, and *Mrs. Dorman*. It was from these that the plants were selected which Mr. Fulford exhibited at the Maidenhead Show, where he secured eight first prizes. On the side stages stand splendid plants of *Aralias*, *Acalyphas*, *Crotons*, and *Dracenas*, grown chiefly in 48's and 32's for house and table decoration, the various coloured foliage giving them an aspect almost resembling that of flowering plants. Small pots of *Caladium argyrites*, *Pilea muscosa*, and *Panicum variegatum* are used for edging, and

worthy of mention in this association are the specimens of *Cocos Weddelliana* and *C. plumosa*. Late plants of Tomatoes were planted out for keeping up a winter supply in another house, and one was being prepared for winter flowering plants. In the Peach house stood two large trees, *Stirling Castle* and *Noblesse* being the two varieties grown, both carrying a good crop of fruit.

The two vineries are lean-to's. In the first we found Muscat of Alexandria. These are grown to perfection at Moor Hall, and before any cutting well repaid a special visit made to see them. Large, well shaped bunches with "golden berries," as mentioned by "H. D." in the Journal on July 19th, page 47, are to be found here. Several first prizes have been already taken from this house. The Vines are planted inside with a border 11 feet wide and 2½ feet in depth, with a concrete bottom. Before planting the soil for the border laid for two months, a mixture of 1 cwt. of bones, ½ cwt. of bonemeal, four wheelbarrows of rubble, and a bushel of charcoal to the square yard of loam being used. Clay's and liquid from the farmyard form the chief manures used in feeding the Vines. *Madresfield Court* and *Muscats* were just colouring

The highest credit is due to Mr. Fulford, the head gardener, for the way everything is done at Moor Hall, and he is well supported by a liberal employer, who takes a great interest in matters horticultural, and is well known in the district by his generous support of the local flower shows.—J. BOTLEY.

The Pear Season and its Supply.

ALTHOUGH there are such numbers of Pears, it is disappointing that they have so very short a season for furnishing ripe fruits, and this is heightened when one compares their fruit room stock at this season with catalogues distributed by fruit growing nurserymen. I



MOOR HALL, COOKHAM

in the second vinery, and promised to give a good account of themselves in due course.

In the frames were noted *Cinerarias*, *Primulas*, *Ferns*, and *Begonias*, all looking in the best of health. Melons are grown in frames, carrying nice, even fruit; a crop of *Suttons' Scarlet* being ready for cutting when these notes were taken. *Cyclamens* are well grown at Moor Hall, and were then in frames. Last year some of the plants carried 150 flowers, grown in 32's. Seedling two-year corms are grown, the plants are never dried off, and are potted as soon as they have flowered, in a size larger. A note of their culture by Mr. Fulford would no doubt be of interest to many readers of the Journal. *Chrysanthemums* are grown on the walks of the kitchen garden. These as other things at Moor Hall are well done, all the newest varieties being included in the collection of between 500 and 600 plants. Very noteworthy were those in 32's, rooted in March, and which bade fair to excite remark in the autumn.

The kitchen garden is not large, as the vegetables are grown in a field, only the choicest being grown at home, the borders containing useful varieties of annuals, for cutting purposes. Apples and Pears are grown on bushes on each side of the walks, with Apricots, Peaches, and Plums on the walls, which were all heavily laden with fruit.

am aware that soil, situation, and the fruit room in which Pears are stored have considerable influence on the length of time the fruits remain in use, but unfortunately in the latter case gardeners have often none, or very little choice, and the fruit room usually forms one of a series of garden offices often arranged in rotation. This may, or may not, serve the purpose well for which it was intended. Some are ill-ventilated, others too cold and damp, or the opposite, but once they are built they often remain, and have to be used.

During October and November there is such a number of Pears ripe that there is difficulty in making a wise selection—that is, in a limited manner, because there are so many that have a reputation, that to omit them from a list would seem to slight deserving ones. The same trouble exerts itself in the case of the restricted as well as the large garden. One consideration must always be borne in mind, and that is some varieties are regular bearers, and others very much the contrary, so that it is advisable to some extent to choose the greater evil of planting more extensively in variety than would be necessary could greater certainty be assured. Then, again, seasons affect Pears, so that when they arrive at their ripening season some will collapse in a very short period from unexplained reasons, and without due

forecast of such casualty being given. Here, again, is afforded an instance of the disability of too restricted a selection. This unfortunately happened rather extensively last autumn with such standard sorts as Marie Louise, Doyenné du Comice, Beurré Hardy, Napoleon, and Seckle, the consequence of which is that though collectively there is a good bulk to draw upon, this is rendered small through this daily and sudden collapse. Pitmaston Duchess and Beurré Clairgeau, two useful, but not by any means high-class Pears, were very much addicted to this premature decay; fruits that one day would appear sound were the next quite rotten. Napoleon, a thin-skinned Pear of similar complexion to that of Pitmaston, also suffered. This was regrettable because it was extremely handsome in outline and colour, and very pleasant to eat, which cannot be said of all good looking Pears.

The disappointing aspect of Pears comes in the dearth which follows plenty so early in the winter, and, as I have previously remarked, it is depressing when one's stock dwindles away in the face of catalogue descriptions, which give their seasons as from January to March, and even later, when the stock of so-called late ones is practically finished by the end of December. For instance, Olivier de Serres should be in season during February and March. This I saw in the fruiterers' windows ripe in December, and what few fruits young trees produced on any trees were ripe in that month. Josephine de Malines (February to April) was used for the Christmas festival, and an effort to extend them failed even to keep them to the middle of January.

Easter Beurré has a misleading title; if it was named Christmas Beurré it would convey a truer tale, for this is invariably when it is used. The French consignments, too, are sometimes, if not always, ready then. Glou Morgeau did not wait for Christmas, and the same failing developed in this as in the earlier autumn Pears; indeed this undesirable trait characterised almost all the dessert Pears in a greater or lesser degree. Pear time thus resolves itself into a season extending over five months. In retrospect these twenty odd weeks seem to have had a very short and merry time, and though probably Pears can be better spared now than earlier through the Orange crop supplying so general an everyday dessert, to the gardener the dearth of Pears gives reflections by no means pleasant.

The Pear crop here surpassed both in extent and quality many predecessors, almost every tree contributing to what was considered a most satisfactory fruit-room furnish; but, apparently, though the heat of summer suited the trees so far as it affected the fruit in the matter of size, there were aspects carried in its train that were not productive of the best results. Perhaps there are some among your readers who can throw a little light on the subject in what Mr. Taylor recently described, and not inaptly, too, a little home-made theory. Mr. Abbey, I am sure, in his almost unexampled store of practical knowledge, and especially that of a scientific nature, can dispense some very tangible reasons and causes for this premature decay that has been a source of so much trouble.

The majority of the trees in these gardens have been planted a good many years, and have attained to large size, consequently their roots are not so near the surface as in younger trees. The subsoil being of a mild or sandy clayey nature, fluctuates considerably by weather changes, thus in times of drought it becomes dry to a good depth, and artificial watering, a necessity, is entirely out of the question. The tropical nature of the past summer would seem to have suited these trees, judging by the large size and bright colours of the fruit, but whether they were able to store the needful juices for perfect maturity remains either a doubt or a negative certainty. I am much inclined to the opinion that the absence of root moisture is that to which the cause of this trouble is to be attributed, especially as it was contemporary with solar heat above that of the average.

It is observable that in warm summers many Pears attain to greater perfection than in those which are more cloudy and wet, and in some measure, no doubt, this explains the reason of the greater size of the Pears that come into the English markets from more sunny France. The mildness of the autumn allowed of the fruit hanging later than usual on the trees, a point emphasised always in dealing with stored fruit, especially that destined to keep until late in winter. The subject appears to be one that appeals for the opinions of the Journal readers, an exchange of which is always agreeable, as it affords the reader opportunity of seeking for truths hitherto unrevealed.

Cultural conditions vary so considerably, as do the opportunity of research, that were it not for the interchange of thought gained by the digest of the Journal pages week by week some gardeners would sink into an inextricable groove, and it must be admitted that fruit growing, and Pears not less important, is a subject all are interested in, and are brought into touch with in some degree. President

Barabé, Marie Benoist, Nouvelle Fulvie, and Le Lectier are varieties that are of more modern recommendation for late keeping, but reports of this winter have already given these as ripe and in use. That being so, what hope is there of having these same in March?—W. STRUGNELL, *Road Ashton.*

Certificated Plants.—No. 5.

The Carnation.

A volume might be devoted to tracing the development of the Carnation during the last fifty years. Not that there was a lack of named varieties at that time; they were on the whole more plentiful than in our own day, because raisers were so much more numerous. It is worthy of mention that two varieties which appear in lists published in 1848—viz., S. B. Admiral Curzon and P. P. B. Sarah Payne—are leading exhibition flowers in the present day; indeed, Admiral Curzon at its best cannot be beaten in its section. Who can say, in the face of this statement, that there is a constitutional tendency in varieties to wear out? Notwithstanding the fact that since the establishment of the Floral Committee as many as 148 awards have been made to Carnations, not one was given until 1887, and then Alice Ayres, Amber Grævetye Gem (Mrs. Reynolds Hole), and the Pink Souvenir de la Malmaison, were so honoured, followed by Germania and a few others in 1888.

Meanwhile the National Carnation and Picotee Society had been operating north and south. The late Mr. Dodwell had taken a commanding lead as a raiser of new varieties, followed by Mr. James Douglas and others. But a revolution in the flower was brought about by Mr. Martin R. Smith, who, some twelve years or so ago, began to seed the Carnation at Hayes, and at once set up a standard of quality which has ruled since. As a contemporary raiser Mr. Smith has outstripped everyone, and caring less for the white grounds, flakes, and bizarres, he mainly devoted himself to the selfs and yellow grounds; he improved upon Mr. Douglas' flowers of the last named class, and he may be said to have created the section of "Fancy" varieties. How popular the yellow grounds and Fancies have become can be seen in gardens and on the exhibition tables of the National Carnation and Picotee Society. Loyal to his ideals of quality, Mr. Smith still holds a commanding lead as a producer, and he can survey with justifiable pride the preponderance of flowers of his own raising on the exhibition stands; and they abound in gardens also.

The late Mr. Charles Turner did much to improve the winter-flowering type. I can remember the tree Carnations of half a century ago—tall, lanky, and spare of foliage. There are now a large number of winter-flowering varieties that are constantly receiving accessions; a few varieties such as Miss Joliffe, Mrs. Leopold de Rothschild, William Robinson, Winter Cheer, Uriah Pike, and others are largely grown for cutting for market.

Not less marked has been the advance made with the Malmaison type, the origin of which seems to be involved in some obscurity. A list of a dozen named varieties might be mentioned in this section, and Mr. M. R. Smith is extending the family; also Malmaison Carnations for blooming in spring and early summer are now grown to a very large extent, and as splendid specimen plants three and four years old. The flower might almost be said to be the floral badge of the head of the family of the Rothschilds.

The introduction of the hybrid Margaret type, a section obtained by mixing the blood of the annual *Dianthus chinensis* with that of the perennial strains, has given to gardeners a section which can be had in flower in a very few months from the time of sowing. The section is undergoing considerable improvement, and most of the blossoms are fragrant, while varied in colour, and in most cases the petals are fringed.

That near relative of the Carnation, the scented Pink, once in its fascinating laced character so dear to the florist, has certainly declined in the public's estimation. The fact that it has to be grown out of doors in the winter, and that its blossoms need protection in the spring and early summer in order to have them perfectly laced, has operated to reduce the area of its culture, and there are no Pink shows in these days to fire the ardour of cultivators. But as border plants, and especially because of their hardihood and floriferousness, the laced Pinks are indispensable. A number of border varieties are cultivated which are very free blooming and equally valuable; some of them are grown extensively for bunching for market. It is fervently to be hoped there will always be found some who will not suffer the fragrant laced Pinks to fall away into utter neglect, for they are too precious to become entirely lost.—R. DEAN.



The Roumanian Oak Forests.—Roumania's impecuniosity has led to the sacrifice of her peerless Oak forests. A contract has just been entered into for the cutting of half a million Oaks under disastrous conditions. Every tree with the diameter of half a yard and above may be felled, says "Building News," the uniform price to be about 12s. per tree, and the contractor to have the option of rejecting one-fourth of the trees having only the minimum diameter of half a yard.

The Value of Soot.—This substance is employed in gardening either as a fertiliser or to prevent or cure insect ravages or with all these objects combined. The fertilising effect of a top-dressing of soot is very decided, and seems to be due in a great degree to the presence of sulphate and chloride of ammonium, but the other substances present may also produce some effect. Soot has been found to greatly benefit Potatoes. As a remedy against those larvæ that lie underground during the day and crawl up to feed on the plants at night, soot is, says the "Farmers' Gazette," especially useful if laid rather thickly around the stems; it will also stimulate the plants to healthy growth. It is also frequently scattered as a top-dressing or along the drills about the time when any crop is liable to visits of the parent insects intent on egg-laying, in such a case it acts as a preventive of attack. Soot is also used instead of hellebore powder for scattering over plants attacked by larvæ—e.g., sawfly larvæ on Currant bushes—or by perfect insects—e.g., Turnip flea on Turnips—and gives valuable results when rightly employed, but care must be taken to avoid applying it when the flavour of the crop would be injured. The Onion crop in particular is greatly improved by giving the ground a good dressing of soot previous to sowing the seed.

Early Spring at Kew.—Visitors to Kew are astonished at the extraordinary result of the mild weather. The eye is dazzled with the pure white blaze of the myriad Snowdrops—welcome harbingers of spring—nodding their dainty heads in the breeze, and with the rich golden hue of the masses of Aconites. In the outdoor ferneries Beaconsfield's favourite flower blinks its delicate yellow, and the Fern fronds are precociously shooting out their hairy spirals. But the greatest surprise, says a daily paper, is the bed of Wallflowers in full bloom in the open near the greenhouse, throwing off their fragrant and sensuous perfume. Even the nimble squirrels, as they chase each other along the trees in order to keep warm, stop to gaze at the early appearance of the sweet-smelling Gilliflower, and the blackbirds are tempted into premature mating. Inside the greenhouse the feast of colour and scent is bewildering, and the Palm house is glorious with its tropical vegetation. Yet the Royal gardens are almost deserted at this time of the year, and the penguins and foreign birds stand disconsolately at the edge of the lake waiting sadly for the visitors who never come to feed them.

Utility in Gardening.—A point is sometimes attempted to be made that while farming is useful, gardening is a mere sentiment, and the lines between beauty and utility are somewhat tightly drawn. But even those who use this argument do not show by their lives that they have full faith in it. One man may look on a magnificent specimen of forest tree growth with admiration of the beauty in every leaf and branch, while the next man be calculating the dollars he may make out of the lumber in the trunk. But after the bank account is swollen with the cash, pure utility will not permit him to clothe himself in a coffee sack or his wife and family in garments of Fig leaves, because he has no use for beauty. He does not travel on a dead level, dreary plain because there is greater expense and labour in getting to a mountain top, but admires the grand mountain scenery as deeply as the mere lover of Nature. Indeed, a lover of any kind is more inspired by beauty than by ugliness, and a bank-note would be less acceptable to anyone if passed as a dirty piece of square paper than with a neat picture of De Soto or some handsome face. To our mind, the objection sometimes made to gardening, that it has no utility in the economy of human life, should be classed with that department of literature known as "fudge."—("Meehan's Monthly.")

A Whistling Tree.—Theatrical managers are certain of this fact. They will not use the Whistling Tree, that is the Tsosfar, for carpentering. In the "Pharmaceutical Journal" we are told that a gum is obtained from it, known under the name of gédaref or Sennaar Gum. It is a very interesting tree. According to Dr. Schweinfurth, as the wind blows across its branches, it produces a sound analogous to a flute. This musical property, wonderful in a tree, especially a gummy one, is due to the fact that the base of the prickles of the hirsute branches is perforated by a certain insect, which sucks the gum out and transforms all the thorns into little flutes. Happily we only see things of this kind in the south of Nubia.

Growth of an Old Potato.—In a recent issue of "Meehan's Monthly," a correspondent refers to a Potato that had grown the second year. He probably intended to convey the idea that a Potato had remained in the ground a whole year without sprouting, and then grew the second season. This would accord with experience. If below the reach of atmospheric air, or the temperature too low, it might lie several years without sprouting—any live vegetation will remain dormant for an indefinite number of years under ice, or probably in any cold-storage vault, as the late Robert Douglas and others have proved by actual facts. It would, says "Q." in the same journal, be a new and very remarkable fact if a Potato, once sprouting, and giving up all its stores of food to the new growth, should be able to perform the same office another season.

The Quaint Monkey Puzzle.—In making some references to one of the Earl of Leicester's lakes, in the neighbourhood of which guns are never fired, "E. K. R." in the "Daily Express," speaks of *Araucaria imbricata* as follows:—Through the Golden Gate we pass into the second long drive, more stately than the other, with its giant *Araucariæ*—"Monkey Puzzles" of popular horticulture—standing in double line on the broad margin of turf. Quaint fruit the female *Araucaria*—for "Monkey Puzzles," like Willows and Hollies and human beings, have their separate sexes—bear in season, like spiky green footballs bulging on the ends of upturned candelabra-like branches. Many of the fruiting trees are showing, by withered limbs below, that the *Araucaria* has short life as a forest tree in England; for what is the half century of their exotic growth to the life of our Oaks and Yews that saw the Civil Wars, and flourish still?

Storage of Apples in Winter.—It is very stale but oft repeated advice, to spread out winter Apples and Pears on shelves in the cellar, and the decayed ones to be removed from time to time. We must wholly disagree with such a course, for when exposed the Apple rapidly loses its moisture and becomes shrivelled, which also causes deterioration of quality. On this account Apples and Pears in cool storage should be kept tightly closed, and they will open up plump and fresh. The great secret for keeping Apples and Pears is, says a Canadian paper, a cool temperature, and 35° to 40° F. will be found most satisfactory. Usually Apples are left to hang too long on the trees and become too much ripened; then they lie in piles or stored in barrels in hot places, perhaps right out in the sunshine for weeks until the hot weather is over; then they are shut up in a warm, close house cellar, with a temperature about 50°, and then the farmer wonders why his Apples do not keep. Let him try gathering them as soon as mature, pack them away at once in a cool place where the temperature does not rise above 40°, and see whether the results are not much more satisfactory.

Cytisus Ardoini.—This is one of the smallest members of this genus, and at the same time one of the best, especially for the rockery. It is a small close-growing species, which rarely exceeds 6 inches in height, even when covered with its dense spikes of flowers, which appear in April and May, and make the plant a brilliant patch of yellow during that time. It is a comparatively rare plant, and is said to be dying out in its native habitat—the mountains of the South of France, through the agency of sheep and other animals, which eat the plants down to the ground. The flowers are borne on a short, erect spike, 3 or 4 inches long, and are of a bright golden yellow. The leaves are trifoliate and covered with comparatively long silky white hairs. A hybrid between this plant and *C. albus* has been raised at Kew, and called *C. kewensis*. It combines the characters of the two parents in a marked degree, the long slender growths of *C. albus* being united to the prostrate habit of *C. Ardoini*, the result being a dwarf, spreading plant with primrose-coloured flowers. It is a rapid grower in almost any situation, and soon covers a large space of ground, throwing out its long branching shoots in all directions.—C.

Messrs. Sutton's Nurseries.

At any season of the year a visit to Messrs. Sutton's nurseries at Reading is interesting, as there is sure to be found something out of the common. Even the month of January is full of interest in this establishment, for there are then the gorgeous displays of Primulas and Cyclamens in variety innumerable, as well as the collections of

in huge quantities, and so are plants of other strains and varieties for comparison; this firm fully believes in a practical test of all varieties obtainable so as to keep abreast of the times. As showing the extent to which this flower is cultivated the annual floral guide for the current year contains no less than nineteen varieties in the ordinary sinensis section, and five in the giant flowered section, or strains of single-flowered sorts, and as may be expected many more are on trial in their nursery, some of which will create a greater sensation even than those that are now in cultivation. In the ordinary



PLAN OF FROGMORE HOUSE GROUNDS.

- 1, Frogmore House.
- 2, Frogmore House Stables.
- 3, Vinery and Peach Houses.

- 4, Gothic Ruins.
- 5, Foreman's House (Kitchen Garden).
- 6, Greenhouses.

- 7, Frogmore Cottage.
- 8, Foreman's House (Pleasure Grounds).
- 9, The Royal Mausoleum.

- 10, Duchess of Kent's Mausoleum.
- 11, The Tea Rooms.
- 12, Lake.

herbaceous Calceolarias and Cinerarias. In all cases the stamp of high cultivation and "finish" was apparent. Nowhere can such perfection be seen as is here to be found in selection, cultivation, and extent; every plant appears to be an exact counterpart of its neighbour, so perfect are the various strains of each flower.

Primulas for seed production alone, as is well known, are cultivated

section of sinensis, Sutton's Pearl, although it has been in cultivation for twenty years, is still one of the most prized of all the Primula family for its general decorative value, as it produces fine trusses of bloom and has a robust yet a compact habit of growth. Sutton's Snowdrift is a variety not nearly enough cultivated; it is absolutely the only white form that remains so, showing not the slightest tinge

of any other colour, no matter how long it remains in flower. The graceful manner in which the large trusses appear to rest on the Fern-like leaves enhances its value for decorative purposes. Royal White, with its dark stems and handsome trusses of pure white blossoms, is regarded as one of the best of white-flowered sorts, and certainly as seen here it would be difficult to excel. Of Crimson King it is difficult to speak too highly; its intense deep crimson colour renders it such a conspicuous object; even a dozen plants make quite a warm glow of colour during the dull days of winter. An early and free-flowering sort is Reading Scarlet, and one that does much to enliven a dwelling house or greenhouse during the month of December.

Much attention has of late been paid to blue flowered sorts. Sutton's Cambridge Blue, introduced by the firm last year, is unique in point of colour. The blossoms are large and elegantly

spots. For decoration this type is valuable. General French carries quite a glow of scarlet in its colouring. As was to be expected, the stellata or star section has received considerable attention at the hands of Messrs. Sutton & Sons, recognising, as they do, the great decorative value for cutting of this type. Mont Blanc, Fern-leaf, with dark stems, carries immense trusses of pure white flowers; one form I noted had extra large white flowers with a distinct yellow centre. The pink form, too, is desirable.

I had almost forgotten to name the charming batch of plants in flower of the new variety Duchess, to be sent out shortly. If anything it grows in favour by yearly selection and cultivation. In Primulas the colour is quite unique, being white with a deep rose circle around the yellow eye. The blooms are fringed and freely produced. One remark about the culture of Primulas might be of some service. Many cultivators sow much too early. At Reading all



THE QUEEN'S TEA ROOMS AND EVERGREEN OAKS AT FROGMORE.

fringed. Reading Blue still maintains its hold upon cultivators for its exquisite tint of colouring. Brilliant Rose and Reading Pink are very free in flower production, offering no difficulties in cultivation whatever, and for the amateur's greenhouse they are especially valuable. Cultivators of Primulas would do well to pay greater attention to the giant type, as they prolong the season, coming into flower later than the ordinary forms of *sinensis*. Giant Royal White, with its dark stems and blooms which measure $2\frac{1}{4}$ inches in diameter, is exceedingly effective. Giant White, of ordinary form with green leaves, have even larger blooms. Giant Pink is perhaps the finest in this section, the blooms, $2\frac{1}{4}$ inches across, are freely borne on stiff stems, and remarkably true in colour. Giant Terra Cotta is so handsome in its colouring that the name does not do full justice to the flower, which has certainly more rose than can be found in a true shade of terra cotta. In any case it is a handsome variety. The blooms are heavily fringed.

Then, too, the various forms of seedling double flowering sorts have been systematically dealt with. Many are now carrying Carnation-like flakes with salmon, purple, crimson, and rose coloured

the varieties are sown at the same time—about the middle of June. Thus it will be seen that only a short time is required to grow the plants to a full flowering size.

I fear a brief mention only can be made of the Cyclamens for which Messrs. Sutton & Sons are famous. Of all the varieties to be seen, and they are numerous, none impresses one more than Suttons' Giant White, the immense blossoms—with single petals $2\frac{1}{2}$ inches long, and as much as $1\frac{1}{4}$ inch wide—contrast so well with the deeply marbled foliage below. The giant pink, purple, and crimson and white are alike beautiful. The ordinary form of *persicum* is admirably illustrated by such varieties as Suttons' White Butterfly, Salmon Queen, and Vulcan. The former has extra fine petals of the purest white, while the latter produces that rich crimson colour so conspicuous wherever seen. The papilio or fringed type is a novelty more curious than pretty; the petals are fringed and curled. In the near future we may see even a giant form of Vulcan, as one plant exhibited a distinct trace of that character, and certainly it is not too much to expect to see from here stellata or "Star" Cyclamens in various colour forms.—E. MOLYNEUX.

Royal Horticultural Society.

Drill Hall, January 29th.

THE second exhibition of the new year was not very large, nor could this be expected, considering the gloom that pervades the country, also the changeable weather. Primulas were contributed, as were Cyclamens, while a touch of spring was given by the Daffodils and Irises. Mr. Young sent some grand Orchids from Clare Lawn. Fruit was not very abundant.

Fruit Committee.

Present: G. Bunyard, Esq. (in the chair); and Messrs. H. Esling, J. H. Veitch, W. Bates, S. Mortimer, A. Dean, G. Kelf, W. Pope, H. Markham, W. Poupart, E. Beckett, F. Q. Lane, G. Wythes, G. Woodward, A. H. Pearson, J. Willard, and the Rev. W. Wilks.

Messrs. H. Cannell & Sons, Swanley, staged sixty dishes of Apples in good condition. Most of the dishes were well coloured and of fair size. A few of the most striking were Cox's Pomona, Hoary Morning, Bismarck, Adam's Pearmain, Tower of Glamis, Bramley's Seedling, Wellington (superb), Court Pendu Plat, Small's Admirable, Stone's, Lane's Prince Albert, Baumann's Red Reinette, and Blue Pearmain (silver Knightian medal). The same firm also sent four large heaps of exhibition Onions, which included grand specimens of Ailsa Craig, Cranston's Excelsior, Reading Improved, and Cocoa Nut.

Mr. W. Strugnell, gardener, Rood Ashton, Trowbridge, sent Apples Reinette du Canada and Claygate Pearmain. Miss Breton, Forest End, Sandhurst, Berks, sent a dish of Yams, which were certainly well grown. Messrs. Sutton & Sons, Reading, exhibited two dishes of their early Rhubarb Crimson Winter; the growth is small, but a beautifully bright colour. Mr. J. Butler, gardener to the Earl of Ancaster, Stamford, sent a box of The Sutton Rhubarb, having stems at least 2 feet long, and of good size and colour. Mr. Woodward, gardener to R. Leigh, Esq., Barham Court, Maidstone, sent three good dishes of Beauty of Kent Apples. Mr. Chas. Ross, gardener to Capt. Carstairs, staged two seedling Apples, crosses between Cornish Aromatic and Cox's Orange Pippin.

Floral Committee.

Present: W. Marshall, Esq. (in the chair); and Messrs. C. T. Druery, R. Dean, G. Reuthe, W. Howe, J. Jennings, J. F. McLeod, C. J. Salter, R. B. Lowe, E. H. Jenkins, E. T. Cook, G. Gordon, C. E. Shea, J. W. Barr, H. J. Cutbush, and Geo. Paul.

Mr. J. Fulford, gardener to F. D. Lambert, Esq., Moor Hall, Cookham, arranged a fine group of Cyclamens, with a few Crotons, Palms, and Maidenhair Ferns. The Cyclamens were all well grown plants, and carrying from twenty to sixty flowers per plant, all giving clear evidence of the cultivator's skill. The award of a silver Banksian medal was richly deserved.

Messrs. G. Jackman & Son, Woking Nursery, staged a few spring flowering plants in good style. Pans of Narcissus Golden Spur, N. i. Cynosure, N. Henry Irving, and N. calathinus were notable. A flowering plant of the Moutan Pæony Hector was certainly a novelty. Freesias and Irises reticulata, I. Bakeriana, and I. Sindjarensis were interesting, while pans of Cyclamens libanoticum and vernum completed an interesting display.

Messrs. Barr & Sons, King Street, Covent Garden, sent a group of Hellebores, Crocuses, and Roman Hyacinths in bowls. The Christmas Roses were in good form, and included in the collection were H. guttatus, H. Apotheker Bogren, H. caucasicus lutescens, H. Dr. Hogg, H. pallidus, H. Bocconi Ellen Terry, H. ruberrimus, H. Afghan Prince, H. Cleopatra, and H. olympicus superbus. The Snowdrops included good pots of Galanthus Whittalli and G. Ikaria. The Hyacinths were splendid bowls of the Roman form, and good pots of the Italian White Mountain.

Mr. J. R. Box, Croydon, had an extensive exhibit of Primula sinensis in variety, growing in 5-inch pots. The collection, as a whole, was lacking in the dark coloured varieties, but those that were staged were excellent, not only in colouring but in size and substance also, while the habit of the plants left little to be desired. The blues were represented by King of the Blues and Wickham Blue; Princess Mary, white; Emperor, a rosy salmon variety; White Perfection, a good white of the Fern-leaved type; Rosamond, a rosy purple of the old type. Giant Pink was one of the best, the colour being soft pink and the blooms of good size, and Wickham Beauty, a good lilac (silver Banksian medal).

Messrs. Jas. Veitch & Sons, Ltd., staged a box of their celebrated hybrid Java Rhododendrons. The varieties were represented by good bunches of bloom. Some of the best were Minerva, Empress, Cloth of Gold, Princess Alexandra, Numa, Maiden's Blush, Multicolor, Ruby, and Ceres, also a fine yellow form in a pot called King Edward the Seventh. The firm again staged some well flowered plants of Coleus thyrsoideus, which attracted considerable attention. From Messrs. R. Wallace and Co., Kilnfield Gardens, Colchester, came a pan of pretty Irises, which included I. Bakeriana, I. Heldreichi, I. species, I. Danfordiae, and I. reticulata Krelagi.

A very fine exhibit was that from Messrs. T. S. Ware, Ltd., Feltham, which was composed of Primulas and Cyclamens chiefly; the whole exhibit attracted considerable attention from the visitors.

The Primulas were well-flowered plants of P. floribunda, P. obconica, P. o. rosea, P. Forbesi, P. verticillata, and P. f. Isabellina. Some pretty plants of Cyclamen Atkinsi rubrum were also interesting, as were also plants of Colchicum Decaisiana, Irises Histrio, I. Bakeriana, I. persica purpurea. Good plants of Galanthus Elwesi robustus were conspicuous, as were also plants of Cyrtanthus intermedius and a few Saxifragas (silver Banksian medal).

Messrs. H. Cannell & Sons, Swanley, staged a good table of Primula pyramidalis in variety. The plants were grown in 5 and 6-inch pots, and included Red Lady, Lady E. Dyke, a very free white; Pink Lady, Semi-double Lady, a white semi-double form; The Lady, Miss Irene, one of the prettiest staged, rosy red in colour; Princess Eva, Fairy Queen, and a few seedlings, some of them of great promise, the substance in the blooms being more marked (silver Banksian medal). Mr. J. Russell, Richmond, sent a few specimens of Cupressus erecta lutea in capital colour. This is certainly one of the best coloured Conifers seen at the Drill Hall for some time.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the chair); and Messrs. J. O'Brien, de B. Crawshay, R. B. White, C. J. Lucas, H. J. Chapman, F. Sander, H. A. Tracy, W. H. Young, E. Hill, W. Cobb, J. Colman, Jas. Douglas, J. G. Fowler, and H. Ballantine.

Mr. W. H. Young, Orchid grower to Sir Frederic Wigan, Bart., Clare Lawn, East Sheen, contributed the only collection of Orchids. It was a superb display of Lælia anceps alba, L. a. Williamsi, L. a. Hilli, L. a. Sanderiana, Phaius tuberculatus, Miltonia Bleuiana, Phalaenopsis grandiflora aurea, P. Schilleriana, Lælia Mrs. M. Gratrix, Lælio-Cattleya Hypatia, Sophronitis grandiflora rosea, Odontoglossum Harryana crispum, Cypripedium insigne Harefield Hall variety, Cattleya chocoensis alba, Aerides Vandarum, and several others (silver Flora medal).

W. Cobb, Esq., Tunbridge Wells, showed Cypripedium Mary Beatrice, a handsome hybrid from C. bellatulum and C. Goweri magnificum. Mr. H. A. Tracey, Twickenham, staged a plant carrying one fine flower of Lycaste Ballae superba. Mr. Foster, gardener to J. F. Alcock, Esq., Northchurch, Herts, sent a hybrid Cypripedium, and Mr. J. B. Lees, gardener to C. D. Quincey, Esq., Chislehurst, Odontoglossum Londesboroughianum bearing a fine spike.

De Barri Crawshay, Esq., Rosefield, Sevenoaks, exhibited two superb varieties of Odontoglossum Rossi named respectively Lionel and Raymond Crawshay. Mr. Crawshay sent also O. nevadense rosefieldiense and O. Hallio crispum aurea. Mr. C. C. Hirst, Hinchley, sent a number of hybrid Cypripediums. Messrs. H. Low & Co., Bush Hill Park, contributed Cattleya Trianae, white variety, and Cypripedium Prewettii.

The Director, Royal Gardens, Kew, staged a well flowered plant of Phaius tuberculatus. The accompanying card, signed by Mr. Rolfe, was as follows:—"P. tuberculatus, Blume. (Limodorum tuberculatum, Thouars). A terrestrial species, identical with the original plant of Thouars. Recently introduced for the first time by Mons. Warpur of Madagascar. The epiphytal species known in gardens under the above name, and figured in several works, is not the original plant, and I have renamed it Phaius simulans (Rolfe), in allusion to the remarkable resemblance which its flowers bear to those of the original species." Messrs. Heath & Son, Cheltenham, showed a group of Dendrobiums. The plants were beautifully flowered. A few Cypripediums were also included in the exhibit. Mr. Patterson, gardener to Mr. Lumsden, Balmedie, Aberdeen, showed some hybrid Cypripediums, some of which had been damaged in transit.

Certificates and Awards of Merit.

Apples Beauty of Kent, Claygate Pearmain, Brabant Bellefleur and Reinette du Canada received awards of merit; they are all too well known to need description.

Calanthe Oakwood Ruby (W. Murray).—This Calanthe is well named. It is a fine dark coloured variety (award of merit).

Cattleya chocoensis alba (W. H. Young).—This is a pure white form of a handsome and comparatively well known Cattleya (award of merit).

Odontoglossum nevadense rosefieldiense (de Barri Crawshay).—This is a larger edition of the type. The sepals and petals are brown with a Picotee margin of yellow. The white front lobe of the lip has a yellow fimbriation; the base has chocolate margins (award of merit).

Rhododendron King Edward VII. (J. Veitch & Sons).—A superb yellow variety. The flowers are of the finest substance and form (award of merit).

An English Invasion—The Countess of Warwick is responsible for an official scare all along the coast of Brittany. The lady gardeners turned out by her classes have been trying to buy small plots in that country near the mouths of rivers, whence their produce might be marketed cheaply. They have even offered fancy prices for holdings not in the market. Nothing is known in France of why these pupils have found it difficult to buy land to their minds in England; and so there is an official circular to the notaries of seacoast departments instructing them to draft no more deeds of sale to foreigners, and to give an account of all such deeds drafted during the past ten years.

Societies.

Reading and District Gardeners' Mutual Improvement Association.

On Monday, January 21st, the annual tea and entertainment was held in the Abbey Hall, and proved a great success. The tea was attended by nearly 100 members, the company including Mr. Leonard G. Sutton (the president), Mr. Arthur W. Sutton, V.M.H.; Mr. Martin H. F. Sutton, Mr. T. Neve (chairman), Mr. H. Wilson (vice-chairman), Mr. F. Macdonald, Mr. H. G. Cox, Messrs. Woolford, Gibson, Powell, Turnham, Townsend, Richings, Nichols, Murray, Pigg, Botley, Overill, Barefoot, Sherlock, Galt, Kitt, Wise, Rigg, Farey, Maine, Green, Roberts, Chamberlain, Osborn, Cox, Barnes, Taylor, Hobbs, Howlett, and many others. The tables were beautifully decorated with Cyclamens from the houses of Messrs. Sutton. After tea an entertainment took place, to which friends of the members were invited. The invitation was readily accepted, some 600 spending a very pleasant evening. The programme consisted of animated pictures and limelight views by Professor Lewis, and humorous songs and sketches by Mr. Ben. Lawes.

Beckenham Horticultural Society.

On last Friday evening, January 25th, a good muster assembled to receive a lecture on "Cypripediums" from Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Cambridge Lodge, Flodden Road, Camberwell. The meeting was presided over by Mr. T. W. Thornton, F.R.H.S., who in opening spoke for some minutes amid a respectful silence of the great loss which the nation has sustained. Mr. Chapman then proceeded with his lecture, giving a store of information very valuable to growers, as how to sow the seeds, and regarding their after culture to the flowering, generally a period of about four years. The lecturer spoke upon the distribution and the native habitats of these plants, showing how their treatment here as to temperature is governed by a knowledge of the different altitudes they are found growing. Some species seem to have become extinct in a wild state, as no new importations are made. The beautiful *C. Fairrieanum* was one mentioned as very rare. The compost recommended is two parts peat and one part sphagnum, and if well away from the influence of town fogs a little fibrous loam, using neither manures nor charcoal. In the course of his address the lecturer often referred to fifty paintings of species and hybrids of this genera which he had brought with him. Deserving of special mention was the exhibit of cut flowers from the gardens of — Simonds, Esq., Woodthorpe, South End Road (gardener, Mr. Day), which included *Dendrobiums*, six varieties; *Odontoglossums*, two varieties; *Lælia anceps*, two varieties; *Lycaste Skinneri*, three varieties; *Cypripedium*, two varieties; *Sophronis grandiflora* and *Masdevallia Chimæra*.—T. C.

National Chrysanthemum Society.

THE Executive Committee have issued their report for 1900. They congratulate the members upon the society still maintaining its position at the head of the special floricultural societies of the United Kingdom. There is little evidence of a waning interest generally, either in the society's work or in the improvement of the Chrysanthemum. This is illustrated in the high order of merit which characterised the society's exhibitions in the past year, and the large number of persons who attended them. The best quality of bloom is seen on the exhibition tables of the society at the Royal Aquarium. The great autumn fête held in November last showed no falling off in the aggregate of blooms staged, while the numbers and quality of the incurred varieties surprised everyone. The new arrangement of groups about the fountains was a striking success, there was a spirited competition by affiliated societies in the trophy class, and the exhibits in the classes in which the Holmes Memorial cups were offered proved as satisfactory as ever. The warmest thanks of the committee are due to the president for his generous contribution of a special prize of £20 in the group class; to Mr. H. J. Jones for his valuable first special prize in the vase class; to Mr. Percy Waterer, chairman of the Executive Committee, for his handsome challenge cups for amateurs; and to all who assist the committee by offering special prizes. The committee have the pleasure to announce that the president has generously consented to continue his special prize in the group class, and Mr. G. H. Richards of Southwark Street has offered a special first prize of £10 for six vases of incurred Chrysanthemums shown on long stems. The Floral Committee held seven meetings during the year, and awarded to new varieties eighteen first class certificates of merit, eight awards of merit, and three commendations. The production of fine novelties in Chrysanthemums is thus shown to be very active. The new method of appraising properties by means of points is found to work well, as every flower is thereby subjected to a close analysis of its qualities before an award is made. A deputation visited Paris at the end of October, taking with them a collection of blooms of the leading types, which were staged at the Paris Exhibition, and commanded great admiration for their high quality. A deputation from the French National Chrysanthemum Society also visited the November exhibition of the society here in London, and were much gratified by what they witnessed.



Fruit Forcing.

Vines.—Earliest Forced in Pots.—The Vines are now in full leaf, and part with considerable moisture by evaporation both under sunlight and at night. Atmospheric moisture must be provided if necessary by damping the paths and walls in the morning, early in the afternoon, and in the evening. Water must also be supplied to the soil in order to sustain the losses taking place by evaporation from the leaves, and provide nutrient matter in solution for imbibing by the roots. Manurial matter is best supplied in the form of top-dressings of lumpy manure or turf applied to the surface. This presents the food elements in a moderate and readily available state. Thin the berries somewhat freely, not, however, making the bunches loose. Maintain the night temperature to 65°, falling to 60° on cold mornings, but raise the heat in good time to 65° to 70° by day, and 75° when mild, admitting a little air at 75°, increasing the temperature with sun heat to 80° or 85°, closing with a prospect of advancing to 90°, at the same time damping the house. Exercise great care in ventilating, avoiding cold draughts, as these cripple the foliage and rust the Grapes.

Early Forced Planted out Vines.—Attention will be required in tying the shoots and in stopping the laterals. It is assumed that the shoots have been stopped two or more joints beyond the fruit. Where the space is restricted they may have been pinched to one or two joints, and in any case the axillary growths may be stopped at the first leaf, and to one afterwards as fresh growth is made. Remove all loose and duplicate bunches, thinning the berries as soon as they become well formed, but do not defer this longer when the properly fertilised berries are distinguishable by their taking the lead in swelling. The inside border may with advantage be covered lightly with thoroughly sweetened stable manure. This, with the leaves and others forming, will induce root action, and the berries will swell freely. To promote surface rooting supply some approved fertiliser to the border. Avoid cold currents of air, also vapour arising from sprinkling hot-water pipes, both causing rust, as also does sulphur fumes. Where there be evaporation troughs on the pipes keep them charged with liquid manure, or sprinkle the paths and borders occasionally.

Vines in Flower.—Houses in which the Vines are in flower should have a steady night temperature of 65°, 70° to 75° by day by artificial means, and 80° to 85° or 90° from sun heat. Muscat of Alexandria requires 70° to 75° and 80° to 85° respectively by day from fire and sun heat, and a comparatively dry atmosphere, and it should be assisted in setting by artificial fertilisation. A constant circulation of warm, rather dry air, is conducive to a good set, and it is not advisable to stop the laterals closely during the setting period, but it does not answer to allow growths to be made which must afterwards be removed by armfuls, for this gives a check prejudicial to the health of the Vines, and does not favour the swelling of the Grapes, but often results in shanking.

Vines Started at the New Year.—Sprinkle the rods in the morning and early afternoon. Continue the syringing until the bunches show on the points of the shoots, when it is best to discontinue it over the Vines, but maintain proper atmospheric moisture by sprinkling the paths and borders in the morning, early afternoon, and evening. Increase the temperature to 55° at night and 60° to 65° in the day, advancing to 75° from sun heat, with ventilation in accordance with the state of the weather. Avoid cold currents, also vapour from highly heated hot-water pipes. Keep up a supply of ammonia, either by introducing a few sweetened horse droppings from time to time or sprinkling the paths and borders two or three times a week with weak liquid manures. Do not hurry on disbudding, letting the bunches appear in the points of the shoots, then the weakest and otherwise least desirable can be removed, but it should be done gradually, so as not to cause appreciable check. Keep the border moist, but not wet.

Houses to Afford Ripe Grapes in July.—Early in February is the latest time for starting Vines to finish fruit satisfactorily by or soon after midsummer. Outside borders need not be covered with anything beyond a little short litter or leaves to protect the roots from frost, for they cannot work in a frozen soil. Close the house at once, merely use artificial heat to exclude frost at night, and maintain 50° in the daytime. This to some extent will cause the sap to rise, and in the course of a few days advance to 50° at night and 55° in the day, with 60° to 65° from sun heat. A light damping about 1 p.m., and damping the house before leaving off work, will aid the Vines in breaking. The inside border should be brought into a thoroughly moist condition, as the Vines need moisture for the transference of the stored matter.

Late Houses.—Gros Colman is unquestionably the most popular late Grape for either home use or marketing purposes, being usually free cropping, good even-sized in both bunch and berry, not difficult to colour, and when well done not inferior to any of the thick-skinned varieties in quality, always excepting those with Muscat

flavour. Like all late Grapes, it requires a long time to grow and perfect the crop, therefore should be started sufficiently early, so that the Vines may have the benefit of the best time of the year—April to September—in which to grow and ripen their crop. The house ought to be put in order, and everything essential in respect of cleanliness to the Vines effected without delay.

The Kitchen Garden.

Carrots.

CARROTS are rather particular as to the ground they can be cultivated upon, succeeding best in well worked, deep sandy soils. Heavy retentive soil or that of a lumpy character is not suitable, because clean roots cannot be produced in it. Some of the Horn varieties may succeed fairly well if a strong endeavour is made to break down the stubborn particles and render the soil pulverised so that the roots can readily penetrate it. The Horn or stump rooted varieties can do this better than the long varieties, which are necessarily very slender when the tap root is first forming. Where deep loamy soil exists which is also sandy, no better ground can be found for the Long Red, Surrey, and Altrincham varieties.

The earliest crops of Carrots are obtained from frames cultivating the French and Parisian forcing varieties, Veitch's Scarlet Model, Sutton's Early Gem, and Early Short Horn. A hotbed of leaves and manure should be formed, throwing together a good body of these materials into a heap to ferment, then turn them several times so as to mix well and rid the bulk of strong heat. This will insure a lasting and moderate heat when the hotbed is put together, whether built into a heap with a frame on top or placed inside a brick enclosure having a fixed or movable frame attached to it. The hotbed ought to be made firm. By this means only can the heat be steadily retained. Place on the hotbed about 6 inches of old potting soil, firming it and making level. Form narrow drills with a straight lath having a flat edge, pressing it evenly into the soil about an inch deep. Scatter the seed thinly and regularly, covering with similarly fine material, and leave the surface quite level. The soil should be moist but not wet. Place on the lights and keep the frame closed until the seed germinates, when air must be given in quantities daily according to the weather, so that the seedlings may grow sturdily. Thinning the young seedlings will be the next process, removing at every operation the most crowded, finally leaving the plants 3 inches apart. At this distance they will form useful early roots.

Raising Early Vegetables in Boxes.

From various causes there are so many elements of uncertainty in raising plants outdoors early in the season that many cultivators have recourse to the plan of sowing various kinds of the choicest vegetables in boxes under glass, thus obtaining strong young plants ready to plant out as soon as the weather permits of their becoming established and progressing unchecked.

Growers of Onions for exhibition, and others who desire large bulbs, find it very advantageous to sow seed in boxes in February in a cool house, and grow in an airy, light position until April, when the young plants can be gradually hardened and planted in rows in rich, well prepared ground. There is no tedious thinning, the plants soon become established, and grow with remarkable vigour.

An early crop of summer Cauliflowers may be secured by sowing seed at once in a box. No further amount of heat is necessary than that which is applied to keep frost out of a structure, a greenhouse temperature sufficing to bring on the plants quickly enough. Too much heat is of course an evil, as it tends to weaken and draw the growth. When the seed has germinated light and plenty of air are required to keep the small plants sturdy. An important matter is not to sow the seed thickly, as by doing so a weak growth must result before the seedlings have attained to a size large enough to prick out in other boxes to strengthen. The latter operation may be carried out when the first rough leaf has formed. Prick out in boxes 4 inches deep, placing a layer of manure at the bottom, and fill up with rich soil made firm. As soon as established keep in full light, and constantly admit abundance of air, transferring the boxes later on to frames where on favourable occasions full exposure can be given.

Early plants of Brussels Sprouts may also be raised in the same way. A better way of treating the seedlings of these and Cauliflowers is to prick them out in frames instead of boxes, but as this is not always practicable, owing to the want of frame room, boxes must be used instead.

The early sowing in boxes is an excellent method of raising Red Cabbage to secure plants, and obtaining useful hearts for use the same season. Lettuces may be considerably forwarded in growth by the simple method of sowing seed thinly in boxes, pricking out in other boxes or frames, and transferring good plants later to permanent rich positions on a warm border.—S.

Cranberries in January.—An Aberdeenshire correspondent writes:—"As an evidence of the unusually mild winter, may I mention that on Monday, upon ascending a mountain about 1200 feet high on the upper range of the Deeside valley, I was able to gather a plentiful supply of Cranberries. The fruit was in excellent condition, and I was able to secure a sufficient quantity to make a tart, which may certainly be regarded as the first Cranberry tart of this century."



TO CORRESPONDENTS

All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Veltha for Rust in Chrysanthemums (A. P. P.).—Probably the Veltha to which "H." alluded on page 52 was that known as Veltha emulsion, and is for use over the foliage. It is a proprietary article prepared and sold by Messrs. Wm. Wood & Son, Ltd., Wood Green, London, N., the firm frequently advertising in our columns.

Repotting Cœlogyne cristata (Amateur).—If your plants of Cœlogyne cristata are at all crowded, so that the new growths have not room for their full development, by all means cut out any exhausted pseudo-bulbs. These, however, will not include all that have begun to shrivel, for with some varieties of this plant even the last made bulbs shrivel a little at this time of year. It is not a good plan for anyone inexperienced in Orchid growing to cut their plants about at all, but you will be quite safe in removing any that are leafless if they happen to be in your way. If not leave them alone.

Propagating Variegated Aucubas (W. K.).—Healthy, short-jointed branchlets from 9 inches to a foot in length, more than half divested of leaves, deeply and firmly inserted in sandy soil, in a cool frame in September, kept close and shaded for a time, emit roots freely. We have seen many plants raised by inserting such cuttings in the open ground on the north side of a wall in August, sprinkling them occasionally if the weather be dry. They would root even now outside if the present mild weather continue, which, however, cannot be expected. The cuttings may also be rooted at this time of the year in pots in a warm pit or propagating case, the pots being plunged in gentle bottom heat.

Plant for Covering Thorn Faggots Laid against Wooden Rails as Protection from very Heavy and very Salt Gales (Ret Rail).—The very best subject, and one employed extensively on the north-east coast of Yorkshire, and also on the coast of Wales, as well as other maritime parts of England and Wales, is the Barbary Box Thorn, *Lycium barbarum*, an ornamental climbing shrub belonging to the natural order Solanaceæ, flowering from May to August. The flowers are twin, extra-axillary, pedicellate, corolla with a purple limb and yellow base; branches angular, dependent. It is not only perfectly hardy in such description of positions as those you mention, but bears constant exposure to sea winds as well as any shrub we know of, though it is not, perhaps, as excellent as an all-round shrub for planting as a shelter by the sea coast as the Sea Buckthorn, *Hippophaë rhamnoides*. Hedges of the Box Thorn are readily formed by placing the plants about a yard apart, and as they grow placing in a few stakes here and there along the line of fence, the stakes being well driven into the ground. It will grow in pure sand, and when lashed by the waves. We hope shortly to publish an article on seaside planting.

Cyperus Decayed in the Centres (W. C.).—We have very carefully examined the specimens microscopically, but failed to find any parasitic micro-organisms of either an animal or vegetable nature. The decay does not appear to us to arise from the root, root stem, or basal portion of the leaves, these parts being perfectly healthy where the decay has not penetrated downward to that extent. We, therefore, attribute the destruction of the "hearts" of the several stems to the attacks of the black fly, which is in the wingless or "virgin female," viviparous stage. This is the species usually found on Sedges, also on grasses, and has been given the name of *Aphis cyperæ*. The aphid on the Cyperus is black, or appears so, and fastens on the tender leaves in the centre of the several stems, and by its sucking of the juices causes their decay, which once set up passes from cell to cell downward by absorption of the decayed solved matter, practically destroying the "hearts," central or growing axis. The evil is aggravated by syringing or watering overhead, and even from the moisture which becomes deposited on the leaves and settles in the centres of the plants. We should spray the plants occasionally with nicotine essence, one part in fifty parts water, or London tobacco juice diluted with about ten parts of water, partly as a deterrent of attack and partly as a remedial measure. The liquid should not be used excessively, merely coating with the finest possible film, and water should be withheld overhead, or until the plants have recovered from the attacks of the aphides. Vaporisation with the nicotine liquid prepared for the purpose would no doubt destroy the aphides, though being sealed in "hearts" between rising leaves they are somewhat difficult to reach, hence liquid is advised in case of attack, it not being bad practice to invert the plants after this has been acting for a time, so as to run off the surplus liquor.

Petunias in Pots (P. B. D.).—If the plants are dwarf they will make fine specimens if grown in a very light position, in a greenhouse at present, and eventually in frames. If desired to flower early the shoots may be tied out and not topped, but if larger and later flowering specimens are preferred topping and shifting must be resorted to. Tall plants with leafless stems are sometimes useful for grouping with other plants, and local requirements must be considered in this reference. Well-furnished, semi-globular specimens are often exhibited from 2 feet to 4 feet in diameter. Whether your old plants are retained or not, it will be prudent to establish young plants from cuttings of the best varieties.

Francoa ramosa (W. R. W.).—Young plants in 3-inch pots may be transferred to others 5 inches in diameter, using a compost of good loam, sand, and one-seventh manure. If the plants are given greenhouse treatment they will continue to grow slowly, will develop into strong specimens early in the season, and commence to push up strong spikes of bloom. It is best to raise these plants annually from seed. When the stock is short one-year-old plants may have the growths thinned out. Those subjected to this treatment, then shaken out and in small pots, will be ready for larger ones, and should be given the same treatment as young plants. Seed can be sown any time during February.

Grasses for Lawn on Sea Coast (H. G.).—The Grasses most likely to succeed are the varieties following and quantities suitable:—*Cynosuras cristatus*, 7 lbs.; *Festuca durinscula*, 7 lbs.; *Lolium perenne tenue*, 30 lbs.; *Poa nemoralis sempervirens*, 4 lbs.; *Poa trivialis*, 4 lbs.; and Clovers—*Trifolium repens*, 6 lbs., and *Trifolium minus* 2 lbs., in mixture, for an acre. The seed should not be sown until April, choosing mild weather with an early prospect of rain, in the meanwhile well preparing the ground for the seed, it not being possible to have it in too good tilth and too free from weeds of a perennial nature. Perhaps you require grass to fix the sand, in which case please state particulars of requirements, and we will advise to the best of our knowledge.

Preserving Gooseberry and Currant Buds (W. W. B.).—Some persons leave the pruning of Gooseberries till the spring, inasmuch as birds, chiefly bullfinches and sparrows, do immense damage in denuding bushes of their most promising buds. When, however, it is desirable to complete the pruning of Gooseberries at once, it is a good plan, in order to save the buds, to dust the bushes with fine dry lime. It adheres readily when the trees are wet, but the operation of applying it is unpleasant during heavy rain. It is much easier to dredge it on the trees in dry weather, first making the shoots wet with a fine-rosed watering can or a syringe. Apply the lime liberally, and the bushes when dry will be quite white. It may be used on Gooseberries and Currants either before or after pruning.

Outdoor Vine Culture (Inquirer).—If the Vines are planted in favourable situations on south aspects in southern and south-western districts of England Vines often yield good crops. They require a gravelly or sandy calcareous soil thoroughly well drained, hence warm and friable. They do not succeed well outdoors in a strong rich soil, being liable in this case to produce coarse sappy wood instead of shoots of medium texture, which become hard and ripe, producing plump firm buds, the shoots from such invariably being fruitful. The most successful results are obtained from Vines on walls or gable ends of buildings having an uninterrupted frontage to the south or south-west, the greatest proportion of sunshine thus being easily secured, for without abundance, especially in the autumn, nut-browned ripened wood, so essential in Grape culture, cannot be obtained. Walls of any height, or gable ends of various shapes, may all be utilised, as Vines are amenable to various methods of training, the best being adopted which the conformity of the wall surface renders most applicable.

Propagating Ficus elastica (F. J. W.).—You will find the present time is suitable for propagating this plant, either by shoots taken off with a heel or by eyes. When it is propagated by eyes they should be taken with a leaf attached to each, and be placed in silver sand to keep them from bleeding. Insert them in small pots well drained, in a mixture of peat and cocoa-nut fibre refuse, and plunge in a strong bottom heat of 90°, with a little sand under each cutting. If they are not placed in a strong bottom heat the eyes will not break. When the eyes have rooted and commenced growing they should be repotted into 48-sized pots, in equal parts of turfy loam and peat, with sufficient sand to keep the soil open. The plants should be placed in a temperature of about 70°, and be syringed frequently; occasionally sponging the foliage is also highly beneficial. The plants should not be allowed to become root-bound until they have grown to the allotted size, when they will be greatly benefited by liberal supplies of liquid manure. During their growing season they should never be allowed to become dry at the roots, as dryness causes the leaves to turn yellow, and spoils the beauty of the plants. Shoots taken off with a heel will make plants much quicker than raising them from eyes; and it is the safer plan, for if strong bottom heat is not afforded, the eyes, as before mentioned, will not break into growth. When only a few plants of rapid growth are required we advise that they be raised from cuttings, but when a great number of small plants is required the mode of raising them from eyes must be adopted.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (A. N.).—1, *Chimonanthus fragrans*; 2, *Anthurium Scherzerianum*; 3, *Asparagus plumosus*. (G. H. F.).—1, *Dicksonia squarrosa*; 2, *Nephrolepis tuberosa*; 3, *Polypodium aureum*; the *Bouvardia* is Alfred Neuner; the *Cypripedium insigne*. (W. R.).—1, *Petasites fragrans*; 2, *Dendrobium cretaceum*; 3, *Crinum capense*; 4, *Saxifraga sarmentosa*.

Covent Garden Market.—January 30th.

Average Wholesale Prices.—Fruit.

	s. d. s. d.		s. d. s. d.
Apples, cooking, bush. ...	2 6 to 7 0	Oranges, case ...	6 0 to 15 0
„ Californian, case ...	7 6 9 6	Pears, crate ...	3 0 7 0
Chestnuts, bag, from ...	5 0 15 0	„ stewing, case of	
Cobnuts, doz. lb., best ...	4 0 5 0	72 to 120 ...	4 6 6 6
Grapes, black ...	0 6 2 6	„ Californian, case	15 0 18 0
„ white, per lb. ...	1 6 5 0	„ ½ case ...	9 0 10 0
Lemons, case ...	9 0 16 0	Pines, St. Michael's, each	1 0 2 0

Average Wholesale Prices.—Vegetables.

	s. d. s. d.		s. d. s. d.
Artichokes, green, doz. ...	5 0 to 0 0	Leeks, bunch ...	0 1½ to 0 0
„ Jerusalem, sieve ...	1 6 0 0	Lettuce, doz. French ...	0 8 1 6
Asparagus (Spruce Grass) ...	0 6 0 8	Mushrooms, forced, lb. ...	0 8 0 9
„ Paris Green ...	2 0 2 6	Mustard and Cress, pnnt.	0 2 0 0
Beans, French, per lb. ...	0 10 0 0	Onions, Dutch, bag ...	3 6 0 0
„ Jersey, per lb. ...	1 6 2 0	„ English, cwt. ...	5 0 0 0
Beet, red, doz. ...	0 6 0 0	Parsley, doz. bnchs. ...	2 0 0 0
Broccoli, bush. ...	0 6 1 0	Potatoes, cwt. ...	3 0 7 0
Brussels Sprouts, sieve ...	0 9 1 6	Rhubarb, doz. ...	1 2 1 5
Cabbages, tally ...	3 0 5 0	Savoy, tally ...	2 0 3 0
Carrots, doz. bnch. ...	2 0 3 0	Scotch Kale, per bushel ...	0 6 0 9
Cauliflowers, doz. ...	1 6 3 0	Seakale, best, doz. ...	15 0 0 0
Celery, bundle ...	1 0 0 0	„ 2nd, doz. ...	6 0 8 0
Cucumbers, doz. ...	12 0 18 0	Shallots, lb. ...	0 2 0 3
Endive, score ...	1 6 0 0	Spinach, bush. ...	2 6 3 6
Greens, bush. ...	0 6 1 0	Turnips, doz. ...	2 0 3 0
Herbs, bunch ...	0 2 0 0	Turnip tops ...	0 9 1 0

Average Wholesale Prices.—Cut Flowers.

	s. d. s. d.		s. d. s. d.
Asparagus, Fern, bunch ...	1 6 to 2 6	Lilac, white, bunch, ...	3 0 to 5 0
Carnations, 12 blooms ...	2 6 3 0	Lily of the Valley, 12 bun.	8 0 15 0
Cattleyas, doz. ...	10 0 18 0	Maidenhair Fern, dozen	
Chrysanthemums, dozen		bunches ...	4 0 8 0
blooms ...	1 0 3 0	Marguerites, doz. bnchs.	2 0 4 0
Daffodils, doz. ...	12 0 15 0	„ Yellow, doz. bnchs.	2 0 4 0
Eucharis, doz. ...	4 0 6 0	Mimosas, bnch. ...	1 0 1 6
Gardenias, doz. ...	3 0 5 0	Odontoglossums ...	6 0 8 0
Geranium, scarlet, doz.		Poinsettias, doz. blooms.	8 0 12 0
bunches ...	8 0 12 0	Roses (indoor), doz. ...	2 0 4 0
Hyacinths, doz. ...	4 0 8 0	„ Safrano, doz. ...	1 6 2 0
Lilium lancifolium album	3 0 5 0	„ Tea, white, doz. ...	1 0 3 0
„ rubrum	3 0 5 0	„ Yellow, doz. (Perles)	2 0 4 0
„ various ...	4 0 8 0	Smilax, bunch ...	3 0 5 0

Average Wholesale Prices.—Plants in Pots

	s. d. s. d.		s. d. s. d.
Acers, doz. ...	12 0 to 24 0	Foliage plants, var., each	1 0 to 5 0
Arbor Vitæ, var., doz. ...	6 0 36 0	Geraniums, scarlet, doz.	6 0 10 0
Aspidistra, doz. ...	18 0 36 0	„ pink, doz. ...	8 0 10 0
Aspidistra, specimen ...	15 0 20 0	Hydrangeas, white, each	2 6 5 0
Azaleas, various, each ...	2 6 5 0	„ pink, doz. ...	12 0 15 6
Boronia, doz. ...	20 0 24 0	„ paniculata, each	1 0 3 0
Cannas, doz. ...	18 0 0 0	Lilium Harris, doz. ...	8 0 18 0
Crotons, doz. ...	18 0 30 0	Lycopodiums, doz. ...	3 0 6 0
Dracæna, var., doz. ...	12 0 30 0	Marguerite Daisy, doz. ...	8 0 10 0
Dracæna, viridis, doz. ...	9 0 18 0	Mignonette, doz. ...	8 0 12 0
Erica, various, doz. ...	8 0 18 0	Myrtles, doz. ...	6 0 9 0
Euonymus, var., doz. ...	6 0 18 0	Palms, in var., each	1 0 15 0
Evergreens, var., doz. ...	4 0 18 0	„ specimens ...	21 0 63 0
Ferns, var., doz. ...	4 0 18 0	Roses, doz. ...	6 0 18 0
„ small, 100 ...	4 0 8 0	Stocks, doz. ...	8 0 12 0
Ficus elastica, each ...	1 6 7 6		



Two Good Investments.

WE refer to two almanacs, both published by the same firm, Messrs. Vinton, the current numbers of which we have read with much pleasure, and we hope, profit. They are the "Live Stock Journal Almanac" and "Vinton's Agricultural Almanac," and we are certain that every farmer in the country ought to possess copies of them both—1s. 6d. is not a large outlay, and he will indeed be a dull dog who cannot derive from their pages information of infinitely greater value than that. We think the "Live Stock Journal Almanac" makes sure improvement with each recurring season, and it would seem hardly possible to improve on the present number. The agricultural statistics and tables are most complete, whilst special articles are written over names which carry with them the fullest testimonials to their special knowledge of the subjects on which they write.

Every breed of horses, cattle, sheep and pigs, is specially referred to, and accounts given of their progress and well being, whilst special articles are devoted to "Sheep in 1900" dealing with sheep as a whole; and with regard to cattle there are short papers on "Some Features of Summer Grazing," by Professor Sheldon; "Our Beef Breeds of Cattle," by Mr. Robert Bruce; and "Management of a Milking Herd," by Mr. Primrose McConnell. "Shorthorns in 1900," dealt with by Mr. John Thornton, heads the articles on cattle breeds; as does "Southdowns," by Mr. Jonas M. Webb those of the breeds of sheep.

Whilst noting that according to the statistics given there is a decrease in the number of cattle over two years of age, but a more than corresponding increase in those under that age, also that the proportion of lambs to ewes for the first time for six years has fallen below 100 per cent., we cull from the article by Mr. W. A. Brown on Leicester sheep, the interesting fact that "one breeder, Mr. George Harrison of Gainford Hall, Darlington, had a wonderful crop of healthy lambs—90 per cent. twins; a few were lost, but not a single ewe." He used Mangolds freely. Here is a wonderful testimony to the use of the root as a food for breeding ewes, but we should imagine that Mr. Harrison has a good range of grass as a run for the sheep whilst consuming the roots.

Amongst the most interesting articles is one by Sir Walter Gilbey on "Army Horses Abroad." Sir Walter deals with the subject in a most exhaustive way, and after showing how horse breeding is fostered by the governments of all the great nations of the Continent, he closes the treatise by a strong condemnation in advance of any proposal to adopt the Continental methods here, as being likely to sap the individual enterprise which has produced the best breeds of animals in the world. "The Pony: Its Breeding for Army Purposes," is a paper by Sir Richard Green Price, strongly recommending breeders to turn their attention to animals of the 14.2 hands polo pony stamp, as being those for which there is likely to be a large demand in the future. The value of local and country shows is excellently proved by Lord Middleton, while much ridicule is thrown by Mr. Tegetmeier on "The Supposed Influence of a First Sire," which is still clung to as an article of faith by so many people. Mr. Albert Munty, Professor Ewart, and Mr. C. Stein contribute valuable papers, and there are followed by articles on the different breeds of horses in 1900, particular regard being paid to the results in the various show rings.

Pigs, sporting dogs, poultry, and turkeys are not neglected, and the whole is illustrated capitally, principally from photographs, and printed and got up in a style which does the greatest credit to the enterprising publishers.

Vinton's Almanac, costing but 6d., is also very good value for the money. Although not entirely devoted to the subject of live stock, as

the one just dealt with, it by no means neglects that very important side of farming, a very good paper by Mr. Gilbert Murray being devoted to demonstrate the economical effect of a mixed ration on the health and development of the stock of the farm.

Professor Wrightson deals very practically with the cost of ploughing, and we entirely agree with his methods of calculation. Mr. Bear, who is so well qualified to give an opinion on the subject, gives us his views on the new Agricultural Holdings Act, while the increasing importance of machinery in the performance of farm work gives extra importance to a most excellent article on "Implements," by Mr. Primrose McConnell. Mr. A. J. Matthews attempts to solve a great problem when he offers us a way to stop the "rural exodus." The suggestion varies very little from the old one of 3 acres and a cow, and it might be successful where the surrounding conditions are favourable.

"The Production of Cider," by Mr. E. G. F. Walker; the "Workmen's Compensation Act," and "Gains and Losses in the Market Garden" provide material for excellent articles well worth reading, and which will provide the thoughtful with ample food for reflection. The last mentioned, written by Mr. Glenn, is most practical in pointing out where the many causes of loss, which may be turned into profit by greater ingenuity and intelligence.

The tables in this Almanac are both varied and valuable, including, as they do, Sir J. B. Lawes' revised tables on "The Composition and Manure Value of Foods," "The Nourishing Constituents of Food," "Feeding Standards," &c. We commend the above to the notice of our readers.

Seed Barley.

Now that there are so many new varieties of Barley grown, and the Old Chevalier is so much neglected, it is satisfactory to receive Major Hallett's seed catalogue, and to see that he is not only not knocked out, but that the pedigree Chevalier is still being improved by selection. We have great doubt whether any of the new kinds are worthy to supersede Chevalier if the average value of straw and grain over a number of seasons be taken into account. The success of new sorts is often attributable mainly to the change of seed, and if sufficient attention were paid to getting a suitable change of Chevalier, we think it would still be found the most profitable variety.

Work on the Home Farm.

We have had a fairly fine week, though we had two very foggy days, and the land has dried a good deal. It is in nice ploughing condition, and does not tread much, but would be better for further fine weather. Already we see ploughs cross-cutting fallows, and a few more sunny days would no doubt set the cultivator to work. To-day the conditions have been more like April than January, and we hope for a continuance of them.

On light sandy land the spring cultivator has made cross-cutting almost superfluous, and if the land be foul with twitch we should certainly dispense with the ploughing where the cultivator can be got to work the land well without previous movement. But, as we have pointed out before, the ploughing must not be left out altogether, but be done after the land has been well worked and cleaned as much as possible. We have often heard remarks made as to the good roots and even other crops generally grown by men whose farms were full of rubbish and whose horses were always up to their necks in work, and deductions drawn as to the uselessness of having clean land. But the reason for the good crops was the absolute necessity for thorough cultivation caused by the foul state of the land.

Because a farm is clean the usual ploughings and dressings must not be reckoned as superfluous. The reason for the large crops so frequently grown by small cultivators is generally to be found in the thorough way in which the cultivation is performed. For one thing, many farmers are afraid to plough half an inch deeper than usual, for fear they may bring up a legacy of dormant weeds. Across a field we know well is a 5-foot strip of land on which the crop is always 50 per cent. better than on the remainder of the field. The whole has been exceedingly well cultivated for forty years, since the drain was put down beneath the fertile strip. Drainage does not account for the difference, but the deep trenching necessary to laying the drain does. Men who work on the farm say there is almost as marked a difference now as there was at first, and it would really seem that the improvement effected by the subsoiling is a permanent one.

The beef trade is decidedly slower, but mutton is very firm. How the Turnips are to be consumed is a puzzle to many minds. Common Turnips (and they are common enough yet) are beginning to show signs of running, so their value will rapidly decrease unless frosts again intervene. Swedes look very green, and will no doubt soon follow their example, for even those in the pies are sprouting vigorously. Clovers are freshening considerably, having wintered remarkably well, and they promise the best sheep pastures for a generation. Altogether the supply of sheep food is such as to make sheep very much sought after for some months.

BARR'S SEEDS

OF FINEST SELECTED STRAINS AND TESTED GROWTH

Barr's New Dwarf Marrowfat Pea, "The Herald."—A very valuable addition to our early Peas, coming in with *William the First* and other earliest round Peas, and bearing a profusion of large, well-filled pods, containing 8 to 10 Peas of fine flavour; sturdy, branching habit; ht. 10ins. to 12ins. Per pint, 3/6.

Barr's Lightning Runner Bean.—A remarkably prolific Runner Bean, and the earliest of all, bearing numerous heavy clusters of long, fleshy pods of a fine, delicate flavour; a valuable acquisition. Per quart, 2/6.

Barr's Covent Garden Beet.—Medium-sized roots, dark crimson flesh, fine flavour. Per pkt., 6d.; per oz., 1/3.

Barr's Champion Broccoli.—A magnificent Broccoli, with fine, well-protected, snowy-white heads. Sow April and May for a succession. Per pkt., 1/-; per oz., 2/6.

Barr's Little Queen Cabbage.—A fine little Cabbage of delicate flavour; highly recommended. Per pkt., 6d.; per oz., 1/6.

Barr's Champion Solid White Celery.—Solid and sweet, remaining long in condition. Per pkt., 1/- & 2/6.

Barr's Paragon Cabbage-Lettuce.—Light green, leaves smooth and succulent; compact medium size; all heart, sweet and tender. Per pkt., 1/-; per oz., 2/6.

Barr's Pride of the Market Cucumber.—A grand Cucumber, with handsome, dark-green fruit of fine form. An all the year round variety. Per pkt., 1/6.

Barr's Thick-Fleshed Tomato.—Surpassing all others in depth of fruit, solidity of flesh, and heavy cropping qualities; the fruit is large and smooth, bright scarlet, and of fine flavour. Per pkt., 1/-.

BARR'S SEED GUIDE contains a select List of the best vegetables and the most beautiful Flowers for Garden and Greenhouse. It is full of Practical Hints, and will be found invaluable to Gardeners, Amateurs, and Exhibitors. Sent free on application.

BARR & SONS, 11, 12, & 13, KING STREET.
NURSERIES: LONG DITTON, NEAR SURBITON, SURREY.

VEITCHS' GLOXINIAS.



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Journal of Horticulture.

THURSDAY, FEBRUARY 7, 1901.

Wild Flowers of Old English Gardens.—IV.



THE limits of space obliged me to defer till this article a few words upon our native sweet Violet, considered as a garden flower, which were meant to have closed the preceding article. It is not easy now to find wild Violets even in the more distant suburbs of London, but *V. odorata* did once grow plentifully along lanes and in copses and about pasture lands near the metropolis; hence, as a plant admired for beauty and fragrance, also esteemed for curative qualities, it was centuries ago welcomed to gardens. Still there is made a syrup of Violets, but if anybody has much faith in it, I do not know them. Some commended milk in which the leaves or root were steeped as a cosmetic and for bruises; probably on the principle of contraries, the flowers which, by their smell, sometimes cause a headache, were placed round the head to cure dizziness. But the plant furnished plenty of occupation, for gardeners tried to produce specimens with very deep purple flowers, what were called "black" Violets, or those decidedly red, and they obtained highly fragrant double flowers. In the hope of raising large and bright flowers London gardeners obtained roots or seeds from localities notable for Violets, such as the West of Eng'and and districts of Ireland.

Not uncommon in gardens, and somewhat improved by cultivation, is the yellow Violet or Pansy, *V. lutea*, a dwarf species good for edging or a rockery, which Mr. Bentham takes to be a variety of the common Pansy, *V. tricolor*. Only a few of our gardeners have seen this plant growing wild amongst the mountains of Wales, North England, and Scotland. From these it was brought to London early last century, for there is no record of its occurrence about the metropolitan

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district. Its flowers are occasionally purple, both when wild and cultivated. But the yellow-spurred Violet, or *V. flavicornis*, did grow at Mitcham in Surrey, also elsewhere near London, presumably a variety of the familiar Dog Violet, its distinction being its short yellow spur, and the rather deeper blue of the petals. When brought into gardens this Violet takes after awhile a shrubby form, living on unchanged for many years; it flowers rather late compared with most of the family. History does not disclose the name of the person who discovered the capabilities of the annual *V. tricolor*, the Corn Pansy, Heartsease, Herb Trinity, and other popular names. Long ago, however, it came from cornfields and pastures to a place in garden borders, where numerous varieties were developed, but certainly only a part of our Pansies are descendants of the wild species. About many of its haunts we find the flowers are white and yellow merely, lacking the third colour.

The ancients did not have the Carnation as a garden plant, it is believed, so much the worse for them; but it was, more centuries back than we can tell, grown in many parts of the Continent. Indeed, the older botanists called the genus *Dianthus*, meaning "gift of God," a testimony to the estimation in which the plants were held. Thomas Hogg, who in the time of George III. kept an academy at Paddington, and who was also a flower fancier, published a little treatise in 1812 upon the Carnation, Pink, Auricula, and other favourites. Therein he remarks that, next to the queen of flowers, the Carnation and Tulip might be considered rivals for the second place. But he thinks the Carnation has the advantage in possessing a rich perfume, and continuing to flower for the longer time. Some confusion of names has occurred amongst this tribe, as was likely enough to happen. It is generally admitted that the Carnations, the Picotees, and Clove Pinks are all descended from the Castle Pink (*D. caryophyllus*), which adorns with its variegated flowers old walls and castles in ruins. Some who climbed to obtain this plant, no doubt, took it by the roots, and found it would grow well in loamy soil mixed with sand, and could be easily increased by layers or cuttings. But the Carnation appears to have become a recognised garden flower, through seeds or cuttings transmitted from the Continent. Parkinson reckoned that he had just upon fifty sorts in 1623; these he divided into Carnations and Gillyflowers. The latter appellation has been much debated as to origin; endeavours have been made to prove it only refers to the month of July, but it seems to be in its first half a corruption of a French or Italian word, describing the aromatic fragrance of the blossoms.

Some years ago now, people were seeking in Kent and other counties a variety of the Castle Pink which Hudson called *D. arenarius*; familiarly it was the Pheasant's Eye, its white flowers having a purplish circle round the mouth. Eventually this became the parent of many double kinds. A few cottage gardens about Kentish suburbs used to show the Deptford Pink, *D. Armeria*, which seems to have gone not only from Deptford, but from Charlton and Eltham, which also yielded this annual. Its smallish pink and white flowers have no smell. The curious Proliferous Pink has not been attractive enough to cultivate. But the London gardeners did find along gravelly slopes beside their river the somewhat rare *D. deltoides*, with grassy tufts and little stems bearing three or four scentless but pretty flowers of pink hue, occasionally white. Ordinary garden soil suits the plant, which is ornamental on rockwork; one of its varieties has glaucous leaves. Growing wild, the Cheddar Pink (*D. cæsius*) is very glaucous; its rosy, fragrant blossoms open early in summer; local here, it is not rare on the Continent, but seems to have been first brought to London from Somersetshire. Our garden Pinks are mostly traceable to *D. plumarius*, which is not British, but, like our Castle Pink, it thrives when wild on old walls.

Amongst the bulbs which are now freely planted about our parks and public gardens the common Snowdrop has a notable place, and it delights the Londoners to see its heads appearing amid the grass while the new year is yet young, giving early intimation that winter is going. Surely a British species; why should it not be? yet some have been puzzled because old herbalists speak of it as a garden plant.

Gerard grew Snowdrops in Holborn, and had the double variety, also a broad-leaved one from Constantinople. When you find the Snowdrop spreading over large spaces in old woods, or growing freely along the banks of rivers, you can hardly think it has "escaped from cultivation," as is asserted. It is, doubtless, a plant that will spread itself freely when it has opportunity. On the road from Singewell to Cobham, Kent, there is a paddock, opposite a mansion called the Owletts, which displays a profusion of Snowdrops in February or March. These grow in company with numerous Winter Aconites, the yellow and green of these making a pretty contrast to the white blossoms. This is a foreign species, and was evidently planted, also I suppose, the Snowdrop, obtained probably from one of the adjacent woodland dells, where patches appear to be wild. Various are the pleasant or sentimental memories linked to this flower; but it is necessary to remind people that the bulb has poisonous qualities, and that it is not advisable to put a stalk into the mouth.

The Snowflake was very common in suburban gardens south and east of London fifty or sixty years ago, but we seldom see it now. Nearly akin to the Snowdrop, it is distinguished from it by the uniformity of the petals, which show a green spot near the tip, both inside and outside; also the time of flowering is usually May. Formerly it grew wild in several places on the Isle of Dogs, and along the banks of the Thames between Greenwich and Woolwich. Its disappearance is not surprising; it is still found about some damp meadows, north and south. Here I may mention a very different looking plant, but of the same natural order, which Loudon states was sometimes grown in gardens; it is easily propagated by seed. But I have never seen it in any except a botanic one. This is the Herb Paris, or True Love (*P. quadrifolia*), very distinct, from its whorl of four leaves, supposed to represent a "lover's knot," occasionally there are five or six; an upright stalk rises with a single green flower, followed by a purplish berry, said to be noxious. Epping Forest, and Chislehurst, Kent, were localities yielding it, which may have been visited by some Londoners who grew it because of the plant's singularity.

Probably we are right in asserting that of all the spring bulbs, taking gardens large and small into our reckoning, the Crocus is the commonest. Friends have asked whether we can boast of a native Crocus, but this is just one of those points that are hard to settle. One species familiar to us, *C. vernus*, as parent of many varieties, came from the mountains of Europe, and the yellow *C. luteus* is also a foreigner, perhaps from the Levant. Certainly the Saffron Crocus is not our own, though its native country is doubtful. We have grown fields of it, and given its name to an English town, and a London locality, by no means charming now; for the evidence is conclusive that Saffron was grown on Saffron Hill, near Holborn, though we wonder rather if it succeeded on the cold London clay. This is an autumn flowering species, and so is *C. nudiflorus*, which friends say they have seen about Warwickshire, covering meadows with its lilac blossom, even up to October. Frequently the leaves do not appear till December; the flower has a long corolla, and is slightly scented. Sir J. E. Smith was convinced that it is a British species, and he thought from observation of *C. vernus* about the Midlands, that it, too, is probably a native. But *C. nudiflorus* is a good plant for borders and rockeries, the leaves look pleasant in spring, though the flowers are late. The net-rooted, or Cloth of Gold Crocus (*C. reticulatus*), which shows its golden flowers early in March, is also claimed as British, it is a fitting ornament for sunny slopes.—J. R. S. C.

Chrysanthemum Rust.—A bulletin on the subject of Chrysanthemum rust, prepared by Dr. J. C. Arthur, has just been issued by the Purdue University Indiana Agricultural Experiment Station. It says that care to keep out the disease and hand-picking, with total destruction of badly diseased plants when it does appear, should be effective in wholly evading the disease or in eradicating it within a year or two. Spraying all plants in a house with Bordeaux mixture or sulphide of potassium will doubtless assist in keeping the disease in check.

*Odontoglossum nevadense rosefieldiense.*

ORCHIDS were not numerous at the Drill Hall on the 29th ult., but they were of the greatest interest. De Barri Crawshaw, Esq., Rosefield, Sevenoaks, contributed amongst other Orchids a spike of *Odontoglossum nevadense rosefieldiense*, which received an award of merit from the Orchid Committee. It is larger than the type and much finer. *O. nevadense* is described by Mr. Williams in the "Orchid Growers' Manual" as follows:—"A thoroughly distinct as well as rare and beautiful species. It has large oblong ovate pseudo-bulbs which are diphyllous; the lorate lanceolate keeled leaves are much narrowed at the base, and the radical scapes bearing long drooping racemes of numerous large and pleasingly coloured flowers, of which the lanceolate sepals are clear bright chestnut with a narrow even edge of yellow, the petals smaller, similarly coloured, with two forked bars of pale yellow opposite the lateral lobes of the lip, which are large, erect, crescent shaped, white spotted with chestnut, the front lobe large, roundish, cuspidate-acuminate, pure white deeply fringed, the disc with a bifid crest and three ob-cuneate brown spots." This description answers admirably for the newcomer, in which, however, the beautiful fringe of the lip is yellow.

Epidendrum atro-purpureum.

EPIDENDRUMS are not as a whole popular garden Orchids, yet they are extremely pretty in many cases and wonderfully varied. There are, it is true, a number of weedy species that are hardly worth considering in the light of garden plants, but they are greatly in the minority. Unfortunately growers are apt to confuse the names, and in some cases to call an Orchid an *Epidendrum* is to condemn it. The species named is an excellent one, and it deserves to be better known. From large, roundish, scaly pseudo-bulbs the spikes rise nearly 2 feet high and carry from eight to ten handsome flowers. In the type these are a light chocolate tint, incurved at the tips and suffused at the base with green; the lip is creamy white with a purple blotch in the centre. The flowers last well, and are sometimes nearly 3 inches across, as large, perhaps, as those of any *Epidendrum* in cultivation.

No one with any idea of Orchid culture need be afraid to tackle this species, which is easily grown, but good strong plants should be procured in the first place, and every endeavour must be made to keep up the vigour of the specimens. Weak, half-starved plants never grow into good specimens, or very rarely. The best place to grow *E. atro-purpureum* is in the Cattleya house, with abundant light and ample atmospheric moisture. In strong heat the growth is too sappy, as it were, and not sufficiently consolidated to have the strength to flower well. It likes a moderate amount of rest after the flowers are past and the growth fully made up, but severe drying off is not to its taste.

The roots are moderately strong and wiry, and have a habit of insinuating themselves among lumps of charcoal and crocks rather than penetrating deeply into a heavy and moist mass of compost. This must be kept in mind when preparing the latter. All the same the roots like moisture, but it must not be stagnant; and as I have often remarked when speaking of South American plants, a good day or two days' drying does them no harm, provided they are well supplied as a rule. It does good in fact by hardening the bulbs and leaves slightly as they grow.

In addition to the type form we have the purple tinted *E. atro-purpureum* *Randianum*, often described as a distinct species; var. *roseum*, a smaller sort, with a rose tinted lip, and one or two others more or less distinct. The plant has been gathered over a very wide range of country in Central and South America, especially about Guatemala and Venezuela, and the type was introduced by Mr. Horsfall in 1836.—H. R. R.



ODONTOGLOSSUM NEVADENSE ROSEFIELDIENSE.

Disas.

My plants of these beautiful Orchids occupy large pans, and during the summer months they are grown in a frame placed under a north wall. One of the lights happened to have a broken square of glass immediately above one of the *Disas*, and the unexpected early frost blackened some of the growths, which still show, and will do for some time, the effects of that night. Too much loam is decidedly harmful, and should only be used sparingly, and that fibrous. As the *Disas* require abundance of water during growth the potting material should be loose, so that water can pass freely through. Anything approaching stagnation is fatal to them. Sand and manure—I used dried cow excreta—can also be dispensed with, all that is required being good fibrous peat and live sphagnum in equal quantity, with plenty of crocks broken very small.

After potting the plants soon began to show signs of activity, and during the summer they were placed outside over a narrow stream in a shady part of the garden. *D. cornuta* was potted singly in 4-inch pots, and grew very strongly, throwing up spikes of bloom 16 inches high. *D. Herschelli*, with grass-like leaves, has made growths as large as the imported ones, and ought to bloom this year. *D. graminiflora* and *D. spathulata* have similar foliage, and have formed large new white growths. *D. sagittalis* in habit of growth resembles *D. grandiflora*, but the flowers are white and mauve.

My plants were housed early in September, and have since occupied a shelf in the cool house close to the ventilators, where frost is only just excluded, and since then the soil has gradually been allowed to become dry. I have been examining the growths, and find them as mentioned and very firm, and a few are commencing to grow again.—ORCHIDIST.

Vandas.

THESE beautiful epiphytal Orchids are splendid plants for the stove, for with care and attention they produce such fragrant flowers, and grow most vigorously. They are natives of the East Indies, where they are found growing in the hottest parts, and where moisture is very abundant. There they grow at a rapid rate, for a period, when the heat is at its height and rain rather prevalent.

It is obvious, therefore, that if we wish for success in cultivating *Vandas* we must imitate as nearly as possible the climate of their native land. The most suitable season for this purpose is, of course, the summer, as then the conditions of our climate are in every

way better adapted to their requirements than the winter. From May to September a temperature of 85° should be maintained; this may easily be done by regulating the fire according to the rise and fall of the temperature outside. Also an abundant supply of water (rain water if possible) should be given at the roots, and a syringing twice a day.

After September less water should be given, and the temperature lowered to about 60° by day, and during winter only enough water applied to the plants as will prevent the leaves curling. Watering during this season must be carefully performed, for if the house be kept in a very moist condition the plants will in all probability start into growth, and if this is not prevented few flowers will be produced. The importance of a perfect season of rest is, therefore, seen when the time arrives for the plants to flower.

About March the flowers usually begin to appear, and a little more moisture should then be given. After the plants have finished flowering, growth once more commences, when the above routine should be gone through. To grow *Vandas*, either pots or baskets of teak wood should be used, and these must be well drained with charcoal or crocks, also thoroughly cleaned. The best material to grow them in is living sphagnum moss and charcoal.

The following are good species:—*V. insignis*, a very handsome species, producing beautiful large yellow flowers, which are spotted with crimson. *V. teres*, with purple petals, sepals cream colour, and lip yellow with crimson markings. *V. cœrulea*, perhaps the finest of the *Vandas*, the flowers being about 4 inches in diameter, each raceme bearing nine or ten. The petals and sepals are pale blue, and the lip deep blue.—S. F.

Seasonable Work in Plant Houses.

WHILE the wind is howling, and the rain coming down in torrents in the open air, the plant grower is contented and happy in the genial atmosphere of some glass structure. All seasons of the year are busy times for the plant grower, as there are a thousand little attentions which, if given to plants at odd times, will bring improved results. A little extra feeding here, repotting there, thinning-out growths, or tying-out shoots are items of daily work with the well trained hand. When February comes in, however, work presses in all directions, and in some instances we have to give certain plants the one thorough overhauling they receive during the year.

In plant stoves, unfortunately, mealy bug and brown scale are ever present to some extent; but much can be done at the present time to keep them in check by cleansing plants thoroughly before much young growth has been made. In some instances, the tedious practice of hand sponging is necessary; but fortunately, by the aid of the fine insecticides now at command, we may destroy nearly all insects by the simple process of dipping the plants. At various times I have tried all the best insecticides now so largely advertised, and with few exceptions I have found, if properly used, they have all the merits the vendors claim for them. They ought always to be used when first tested according to the directions supplied with them, and then, if not thoroughly efficacious in destroying insect life, the strength should be gradually increased—provided the plants have not been injured—till the desired results are obtained.

I have invariably found that all insecticides may with safety be used at a greater strength than recommended, and this is undoubtedly a wise precaution on the part of the manufacturer. In all instances, however, a few plants should be tested by mixing the insecticides at the ordinary strength before giving stronger doses. Such a course is a safe one to pursue, and soon teaches the operator the exact strength at which it is the most effectual, yet safe. After plants have been cleaned and houses washed a good deal of potting may at once be done, but in conjunction with the cleaning process the work of pruning such plants and creepers as need it should be performed.

Allamanda Hendersoni is still as popular as ever for training thinly over the roof of a stove, and if the roots are confined to a pot or border it can be so managed as to obstruct the light but little during the winter. It is, I know, customary with some cultivators to give water enough to retain the leaves throughout the winter, and good results are obtained by the practice; but seeing that equally good, and in some cases better, results may be secured by keeping the plants dust-dry in winter, so as to cause them to shed their leaves, that is the practice I prefer, as it is advantageous to the other occupants of the house. Under such treatment the wood becomes thoroughly ripened, and the shoots, if pruned back to two or three eyes, quickly send out plenty of young growths under the influence of a genial atmosphere and a gradually increasing supply of moisture at the roots.

Stephanotis floribunda seems quite as popular as of yore, and is usually trained thinly to wires, where it is necessary to restrict growth to prevent it from forming too dense a shade for the plants beneath. Under such circumstances it is a good plan to keep the plants dry at the root for a couple of months during winter, and at the present time to cut back all weak growths to within two or three buds of their base. Wires covered with a number of short stubby shoots will produce a great number of flowers in due time. A freer method of training will, however, give still better results, and should be adopted when practicable. Plants treated thus should be kept less dry at the roots during winter, and at pruning time only the unripened parts of shoots and old wood be cut away; clusters of flowers may then be obtained along the whole length of the shoots retained. By removing an inch or two of the surface soil, top-dressing with good turfy loam and cow manure, and throughout the growing season feeding liberally with liquid manure, and top-dressing with chemical fertilisers, the plants are kept in exuberant health; and such treatment suits *Allamandas* too.

Crotons which have become too "leggy" may also be cut back severely now, as the tops form fine plants quickly at this season if inserted in bottles of water or in soil where there is plenty of bottom heat. *Dracenas* of all kinds may also be rooted freely in water, or by notching and placing moss round them. They root so freely and surely under such treatment that, except in the case of very large heads, there seems to be no necessity to practise the more troublesome plan of dividing a small pot, fixing it securely round the plant, and then filling it with soil, in order to get the top rooted before it is severed from the parent plant. I purpose to continue these notes in an early issue.—H. D.

Pancretium fragrans.

THE accompanying photographic reproduction represents three plants of *Pancretium fragrans*, two of which stand on a hand-barrow that is 6 feet long and 2½ feet wide, which will convey an idea of their size. We grow a number of *Pancretiums*, as their beautiful white flowers produced in large clusters, rising well above the broad, handsome foliage, are always admired by people looking through the houses during October—the month we get them in flower. They are, too, exceedingly useful for cutting, and using in large vases with suitable foliage, while for wreath and bouquet making they are indispensable, if carefully handled. Grown in small pots they are admirably adapted for house plants during the time they are in full beauty, the fragrance being delicious.

The place that we find suits them best is on a large centre bed in an intermediate house, with a temperature of about 50° during the winter, where they stand the year round. The treatment we give them differs from that of many growers, as the plants are never allowed to become dry at the roots, but are kept well supplied with water, summer and winter. The plants in the photograph were potted four years ago in a compost consisting chiefly of rich, fibrous loam, with a sprinkling of bonemeal. Good drainage was formed, with the result that they have not been disturbed since, but are liberally watered with liquid manure and soot water twice a week. Many of the bulbs are upwards of 17 inches in circumference, with leaves more than a yard in length. During the summer months they are shaded from the bright sun and syringed morning and afternoon. Thrips is sometimes troublesome, and if not kept down will soon disfigure the handsome foliage; sponging with softsoap and water will keep the pest in check. The photograph was taken by Mr. J. R. Webster, Taplow.—J. B., Bucks.

Chelsea Physic Garden.

As a connecting link between the past and the future, pertaining to the science of medicinal botany, no more fitting subject for reference, by way of inaugurating the new century from a horticultural point of view, can be found than the historic Physic Garden at Chelsea, and of which, *en passant*, it may be remarked, reference on more than one occasion has appeared in the pages of the *Journal of Horticulture*. An additional record of the unique old establishment may not, however, be considered out of place, and which I quote from a contemporary published forty years ago as follows:—

"*The Botanic Garden, Chelsea*.—The Chelsea Garden was founded by the Apothecaries' Company in 1673, though the inscription over the gateway bears the date of 1686. The truth is, that it was not until the year last named that the garden was effectually arranged. For when first commenced, the company had no funds disposable, and for the purpose, as well as to re-erect their hall destroyed in the great fire of 1666, they were obliged to have recourse to the private liberality of their members. This conduct is recorded to the honour of the company, for the outlay upon the garden was solely for the promotion of science.

"This garden was rendered permanent by Sir Hans Sloane in 1721. Having purchased the Manor of Chelsea, he gave the company the site of the garden, a freehold of 4 acres, on condition that the demonstrator of the garden should deliver annually, in their name, to the Royal Society fifty new species of plants, until the number so delivered amounted to 2000. This presentation of plants commenced in 1722, and continued until 1773, when 2550 species had been delivered. In 1677 Richard Piggott was curator at an annual salary of £30 and his lodging, and the garden under his care was well planted with fruit trees and medicinal herbs. In 1680 he was succeeded by Mr. John Watts, with a slight increase of salary. A greenhouse was erected the year following, but he neglected his charge, and was removed. Mr. Doody, the cryptogamist, was his successor. Petiver, Miller, Forsyth, and Curtis, in succession, had care of the garden, and increased its utility. In 1814 died Mr. Fairburn, who had been its curator for thirty years, and he was succeeded by Mr. William Anderson, whose decease in October, 1846, made a vacancy for Mr. Fortune. He had £100 a year salary and apartments, and effected several excellent improvements, but shortly resigned on his appointment to the Chinese Mission to the present much respected curator, Mr. Moore."—G.

Insects and the Colours of Flowers.—It has been asserted that insects are particularly attracted by the colour of certain flowers. Felix Plateau, after investigating the conduct of insects in their visits to various flowers, concludes that while they may perceive colours and thus be enabled to distinguish, at a distance, between flowers and leaves, yet they show no preferences among the different colours. Blue, red, yellow, white are indifferent to them. He thinks that the odour of flowers affects insects more than their colours do.

Melons.

(Continued from page 38.)

MELONS are now generally grown in houses—span-roofed or lean-to—and the plants trained on trellises near the glass. Of the two structures I prefer a span-roofed house of the following dimensions to any other for growing Melons. Width from out to out 12 feet; height, 11 feet; width of inside borders round the sides, 2 feet 6 inches; depth 1 foot 3 inches; with chambers underneath covered with slate slabs, and two rows of 4-inch hot-water pipes in them for bottom heat, and two rows of 4-inch pipes on either side of the path for atmospheric heat. This will be sufficient piping to maintain a temperature of 70° in all states of the weather. The outside walls 9-inch brickwork, and 4 feet 6 inches above the ground level. The retaining walls of the inside borders single brick on the flat (4-inch work) 2 feet 9 inches above the level of the floor, finished with a coping of cement or thick slate. The doors at either end of the house 3 feet 8 inches wide and 6 feet 4 inches high, to allow free access when filling the borders with soil, or when emptying them. The roof to be trellised with strong galvanised wire 9 inches apart and 16 inches from the glass, and the structure ventilated from end to end, at the ridge, by simultaneous opening gear.

The house may be made to any length, according to requirements, and supplied with water tanks according to its size. There should be no difficulty in growing Melons in a house of this description if the cultural details are properly attended to. But Melons can be grown well in large houses containing a miscellaneous collection of store plants. There are several large span-roofed houses in the gardens under my charge where I grow Melons, Cucumbers, pot Vines, and a collection of plants together, and I have no hesitation in saying that they are all fairly well grown. But I do not recommend growing Melons with other plants when it can be avoided.

With respect to the aspect these houses should occupy, there is much difference of opinion. Most writers, however, recommend that span-roofed houses should run north and south, while others contend that they should run east and west. I have several span-roofed houses where I grow Melons that occupy both aspects, and I find no material difference in either. The Melons grow and fruit as well in the one as in the other. But to be successful in the cultivation of the Melon (or indeed of any plant) much depends on attention to little details at the proper time, the neglect of which will lead to failure and disappointment. Seeds for an early crop may be sown the second week in January. I think it is a mistake to sow much earlier than this, as the plants make little progress till the days lengthen. I put a dozen seeds in a 5-inch flower pot filled with light soil—sifted loam and leaf mould in equal parts. They are then watered with a fine rose watering can, and the top of the pot covered with a piece of glass, which keeps the soil moist and protects the seeds from being eaten by mice before germination. The pots are placed in a brisk bottom heat in one of the stoves, and the young plants make their appearance in a few days, and, when large enough, they are potted singly in 3-inch pots. Some gardeners recommend putting two seeds in a small pot, and after germination removing the weakest plant, which obviates the necessity of potting, and the risk of giving the plants a check in the operation. But, after all, the advantage gained by this method is more theoretical than real.

Melons can be grown in ordinary garden soil enriched with crushed bones, wood ashes, or rotten stable manure, and produce good crops. But from long experience I consider the best of all soils for the Melon is a yellow fibrous loam taken from the surface of a meadow that has lain in pasture for several years, and stacked in a ridge for some time to mellow before being used. It should then be chopped up roughly and a little leaf mould, old mortar, and wood ashes added to it, and all thoroughly mixed together by turning it over several times. In soil of this description I grow Melons for three years in succession without changing it. Some time before it is required it is dug over to the bottom, and the soil thrown up roughly to dry and sweeten. Before planting it the lumps are broken and the border trod all over, made firm and level, and mounds of fresh soil made on the top to start the plants in.

Some growers still continue to fill only a portion of the border at first—just sufficient soil to start the plants—and when it is permeated with roots more soil is gradually added until the border is filled. I do not think there is much advantage gained by this method; besides, it makes more labour at a season when there is plenty of other work to be done. I always have the borders filled at once and made firm, and the soil is allowed to get thoroughly warm before the plants are set out. To do Melons well they should be allowed plenty of

room to develop, and I never plant them closer than 4 feet apart, on mounds of earth raised 4 inches higher than the level of the border, and 14 inches wide on the top. But previous to planting neat stakes are put into each mound long enough to reach the first wire on the trellis, and from the top of each stake to the top of the trellis a thin strip of split Bamboo cane is tied to each of the wires to make them firm for training the main stem of the plants to. After planting has been finished, earthenware collars, a foot in diameter and 4 in. deep, are slipped over the plants and pressed



PANCRA TIUM FRAGRANS.

firmly in the soil encircling the stems, so that the person watering the borders—if careful—can do so without putting any water inside the collar, as the earth here is kept as dry as possible to prevent the plants from damping off at the base. To guard against water getting inside the collars when syringing the plants pieces of strong brown paper with slits in them to the centre to go round the stems are placed over the collars. This prevents any water getting inside of them, if the papers are removed as soon as syringing is finished. By adopting these simple means it is seldom, indeed, that the plant damps off at the neck, if it has been properly planted, and put no deeper in the borders than it was when growing in the flower pot. The plants receive one good watering after being planted, but never any more inside the collars. The borders should be watered whenever they require it, sometimes as often as three times a day, when the plants are in full vigour and the weather hot and sunny.

As the plants grow the main stems are trained to within a foot of the top of the trellis and then stopped by pinching out the points, and before they have finished growing the stems reach to the top of it. The lateral shoots between the cotyledons and first wire of the trellis are rubbed off, and the others trained to the wires and stopped at the second leaf beyond the female flower, and all the sublaterals are stopped at the first leaf, and the tendrils pinched off as soon as they appear on the vine—(Paper read by Mr. A. PETTIGREW before the Royal Horticultural Society.)

(To be concluded.)

Winter Pruning.

PRUNING is not a mere detail of garden practice, it is a science, which should have a much higher place in horticulture than it has held hitherto. The amount of harm done in gardens with the pruning knife by ignorant men is beyond belief, and by way of test every gardener should be able to give a satisfactory reason for each cut made, to explain why a shoot is pruned or not pruned, to show that his work as a whole is conducive, not only to fruitfulness, but to the production of fine fruit. In many gardens the annual pruning of fruit trees is now being done; the trees have produced their crop of vigorous shoots, which are now being shortened to within an inch or two of the base. What is the use of such growth? What is the use of such pruning? Let me invite every society for the mutual improvement of gardeners to take these queries for discussion at their next meeting, to try and make it clear to every member that the growth of a fruit tree is for the production of fruit, and not of flower sticks. How anyone can go on year after year contentedly hacking off a thicket of wood, and getting little, if any, fruit for his pains is past comprehension.

The remedy is obvious. If it is required to retain growth within prescribed limits and symmetrical outline recourse must be had to root-pruning to check undue vigour of growth. Coincident with this there must be a judicious and tentative system of summer pruning to induce a free production of blossom buds, a rapid development of spurs. Winter pruning of such trees then resolves itself into the removal of useless spray, the pruning of sub-laterals shortened at the end of August—a detail of summer pruning—any necessary thinning of spurs and spur growth, the shortening of leaders, and it may be the thinning of branches which becomes necessary as spur development goes on. If you want fine fruit and plenty of it from spurs, the spurs must be fine. Have the branches of pyramids, cordons, bushes, and espaliers wide apart, and bristling with bold fruit buds, and remember that branch-thinning as well as spur-thinning often becomes a necessity.

Where freedom of growth is possible the shoots of trees of exceptional vigour should be left at full length and be well thinned. The beneficial effect of this treatment upon both Pears and Apples is seen either in the first or second year, subsequently in the increase of fruit buds. It is not altogether a question of sorts. I have two trees of Lord Suffield Apple, one of which so treated had its long robust shoots so thickly set with blossom buds that it was laden with a heavy crop of fruit in the second season. On the other fruit came more slowly, but it came eventually, both trees being changed from barrenness to fruitfulness by the simple remedy of thinning shoots freely, and leaving the remainder unshortened. The treatment applies to established trees, often old, which have apparently become irretrievably barren. No fairer sight have I seen in fruit culture than some old Apple espaliers on each side of the central path in the garden of a farmer friend. The path leading from the entrance gate to the front door of the farmhouse was arched over by the branches all heavily laden with fruit. It was some years ago that I saw this charming arcade, and the sight and the lesson it conveyed will never be forgotten. The old trees had probably been hacked about for many years; the freedom of growth which I saw was unlikely to have been an outcome of reasoning, of scientific acumen, of set plan or purpose of any sort. The trees had most likely been left to chance, which for once had proved the best thing possible for them.

Another very important part of winter pruning is that of quite young trees. Whatever may be the form to be imparted, whatever may be the stock on which they are grafted, do not be too eager for fruit. The man whose boast it is that his trees bore so many dozens of fruit the first season is proclaiming his mistake. Of all things I should like in his interest, or, better still, in the common interest, to prevent a recurrence of such folly. When we plant a fruit tree we have first of all to strive for a vigorous development of stem, branch, and spur. Strong, firm, well ripened wood is what we require and must have; only get this, and the fruitful habit is easily induced if it fails to come naturally.

Now, let me ask any readers of the Journal who may have planted fruit trees last season to examine them closely, and see what sort of condition they are now in. They came from the nursery well furnished with robust, healthy growth; have they made growth of similar vigour since they were planted, or do they now present a comparatively starved and stunted appearance? If the latter, something is wrong; what it is one can only suggest, as it is impossible to be positive without actual inspection. If the trees were not pruned when planted the first year is usually lost; if they have been suffered to bear fruit they are now probably so much weakened that any fresh growth has an attenuated appearance. Cordons may have a number of lateral growth 2 or 3 inches long, each shoot tipped with a blossom

bud. Such shoots must be shortened, and nothing should induce one to leave them for the chance of fruit. Spur formation must begin at once; fruit the first two years is altogether a secondary consideration.

I was requested some time back to inspect a garden where in the fruit trees had become practically barren. The situation was admirable—a sunny southern slope in a southern county; the soil was shallow, upon a substratum of sand. Peach and Nectarine trees on one wall, though starved, were sufficiently healthy to justify my advice to shorten all main branches to within about 3 feet at the base, to prune out any weakly growth remaining after that had been done, and to give the roots quite 2 feet in depth of fresh, sweet, rich loam, removing as much of the shallow exhausted soil as possible without damage to the roots; then with a surface dressing of manure and liberal watering during growth next season free robust growth is practically a certainty. I had to condemn another wall of trees outright, and recommended a selection of choice cordon Pears as a suitable substitute for worn-out Apricots and Figs. The best Pears are entirely worthy of wall space as cordons. They soon reach the limit of stem extension, form spurs quickly, and come early into fruit bearing, the fruit being of superior flavour to that from trees growing in the open.

Very interesting is this work of winter pruning if it is done in the right way with judgment and care. Each kind of fruit requires special treatment, each tree being pruned according to its condition. Peaches and Nectarines, for example, often require pruning more freely than usual, simply because they have so much weakly growth. To have really fine full-sized fruit there must be robust growth well set with triple buds. Slender growth with its single blossom buds cannot yield fine fruit. If the trees have much small wood off with it; be content with a moderate quantity of fruit this season, keep the soil well stored with fertility throughout the period of growth, and there will be plenty of stout wood from which a full crop may be had next year.—L. E.

Figs Under Glass.

THE trees in pots started in December are now advanced in growth, and it is necessary to insure a compact habit and good results in the second crop to pinch out the points of the shoots when they have made five leaves. In order to insure progressive growth a steady temperature of 55° to 60° at night, and 65° by day, advancing to 75° with sun heat, closing early, and allowing an advance to 80° or 85°, or even 90°, is advisable. In dull weather a little extra heat early in the day will allow of ventilation, if only for an hour or two, to give a change of air, which tends to solidify the growth. Keep the bottom heat steady at 70° to 75°, introducing fresh leaves as required. Red spider must be kept down by syringing, but always early in the afternoon, to allow the leaves to become dry before night. In dull weather it is better to damp the paths than to keep the plants constantly dripping with water, which hinders evaporation, and prevents the elaboration of the sap.

The early-forced planted out trees started at the new year are growing, and require a temperature at night of 55°, and 60° to 65° by day, with a rise to 70° and 75° from sun heat. Syringe twice a day on bright days, but in dull weather morning syringing with damping in the afternoon will be sufficient, ventilating freely on all favourable occasions, as a weakly growth cannot afterwards be made stout or the foliage become thick. A little partially decayed lumpy manure placed on the border will attract the roots to the surface whilst not depriving the soil of air, and water in a tepid state should be given as necessary, but avoid over-watering in the early stages, especially with liquid manure.

Where there is more than one Fig house with the trees planted out the second may be started at the beginning of February, and these will give a first and second crop of Figs. The trees bearing on the extension growths produce grand fruits, Negro Largo being magnificent, those having borne and become bare being cut out so as to give place to sturdy well furnished growths, thinly disposed, and kept clean. Bring the border into a thoroughly moist state by repeated supplies, if necessary, of tepid water or liquid manure. Syringe the trees occasionally, damping the paths twice a day. A temperature of 50° at night and 55° by day is sufficient to commence with, advancing to 65° from sun heat, ventilating freely on all favourable occasions.—GROWER.

The Alexandra Palace.—Alexandra Palace and park have at last been secured to the people for all time, thanks to the exertions of Mr. Burt and his public-spirited colleagues. The news was generally made known on Friday, but a formal announcement had been made previously at a meeting of the Islington Borough Council. There the Mayor stated that the purchase money had been paid and the Palace and grounds were the property of the people. North London must be congratulated on this magnificent accession to its public properties.

NOTES & NOTICES

Recent Weather in London.—Winter has come to London during the past few days in the form of a fall of snow on Monday night, a rapid thaw, and a sea of slush on Tuesday. The wind continued cold on the latter day, and at the time of going to press on Wednesday it was milder, with indications of rain.

Weather in the North.—For the past week wintry weather has prevailed, and frost has ranged from 4° to 13°. Snow has fallen over the whole country and severe drifting has occurred in the northern counties, where roads have been blocked and the railways with difficulty kept open. Some of the days have, however, been bright and pleasant. On Monday there was a further threatening of snow.—B. D., *S. Perth-shire*.

Royal Horticultural Society.—The next fruit and flower show of the Royal Horticultural Society will take place on Tuesday, February 12th, in the Drill Hall, Buckingham Gate, S.W. The various committees will assemble at noon as usual, and at three o'clock the annual general meeting of the society will be held at the society's offices, 117, Victoria Street, Westminster, S.W.

The Nursery and Seed Trade Association.—The general meeting of this association will be held at 30, Wood Street, Cheapside, on Tuesday, the 12th February instant, at 5 P.M., to submit for adoption the report of the committee, to elect new committee of management and auditors, and after the election will proceed to hold the first meeting for election of officers for the current year.

The Royal Gardeners' Orphan Fund.—The annual general meeting of the subscribers to this fund will be held at the Essex Hall, Essex Street, Strand, London, W.C., on Friday, February 15th, for the purpose of receiving the report of the committee and statement of accounts for the past year; to elect officers for the ensuing year; to elect twelve children to the benefits of the fund; and to transact such other business as may arise. The chair will be taken at 3 P.M., and the poll will close at 4.30 P.M. At 6 P.M. the annual friendly dinner of the committee and friends will take place at Carr's Restaurant, 265, Strand, under the presidency of Mr. Herbert J. Cutbush.

In the Markets.—The ordinary winter vegetables are again abundant and cheap. Cauliflower only is still rather high, a moderately well-filled head costing 3d. to 4d. Savoy, Turnips, Parsley, Carrots, Turnip-tops and Parsnips are at very reasonable prices. Lettuce and Endive are also at moderate prices. Foreign Tomatoes can be bought for anything from 4d. to 8d. a lb.; English cost 1s. 3d. to 1s. 6d. Rhubarb is now very cheap and plentiful. Seakale has come down to 1s. 3d. and 1s. 6d.; Chicory 5d. a lb.; Sprue 1s.; Asparagus about 3s. a bundle, and Paris Green 1s. to 1s. 6d. more. American Cranberries sell at 9d. a lb.; Californian seedless Oranges 2d. to 2½d. each; other varieties very cheap. Newtown Pippins realise about 4d. a lb.; Golden Russets 3d. to 4d.

Technical Instruction at Urswick.—On a recent evening Mr. F. P. Walker, B.Sc., delivered his second lecture on the "Fungoid Diseases of Plants," and by special request confined his remarks to the Potato disease. By the help of a fine series of slides he traced the life history of the dreaded disease through all its stages. For its prevention the lecturer recommended the destruction by fire of all haulms where there has been the slightest suspicion of disease, and of all rotten tubers. Where unsound Potatoes are fed to the pigs thorough cooking should be resorted to. Spraying with the bluestone and quicklime solution was recommended for the growing crop before the disease begins to show itself, care being taken to get the solution well to the under side of the leaves. Mr. Walker proceeded briefly to call attention to the Potato manuring experiments carried out during the past season in various parts of Lancashire, and copies of the results were distributed among those present. It is intended to continue the experiments during the forthcoming season, and it is hoped that an experimental station may be provided on some farm. The attendance at the lecture was very satisfactory.

Presentation to Mr. A. J. Allsop.—We are informed that Mr. A. J. Allsop, head gardener to Viscount Portman, was lately the recipient of a clock, mounted in a walnut case, presented by the employés under his superintendence at Bryanston, Blandford, a post that he has recently vacated.

Death of Mr. J. Baguley.—It is with regret that we learn of the death from pneumonia, on the 29th ult., of Mr. J. Baguley. The deceased was for some years foreman with Mr. Wm. Bull of Chelsea, and subsequently with Messrs. Charlesworth & Co., Heaton, Bradford, for whom he was traveller and foreman.

The Williams' Memorial Medals.—At a meeting of the Williams' Memorial Trustees on the 31st January, Dr. Masters in the chair, it was decided to offer for competition at the Glasgow and West of Scotland Horticultural Society's Show, to be held in Glasgow this year, a large Williams' Memorial silver medal and £5 in cash; also at the Hanley Horticultural Society's Show a large silver medal, and at the Conference on Lilies, to be held at Chiswick this year, a similar medal.

Fruit Trees in Queensland.—Fruit trees are being subjected under the Queensland Department of Agriculture to an heroic remedy for scale and other insectivorous pests. This is to cover them singly with an air-tight bell-tent, and from cyanide of potassium and sulphuric acid fill it with poisonous gas. Spraying has given way to this method, which is not only more effectual but cheaper. Its use last year had become so extensive in the colony that 20,000 trees were fumigated. The only objection to it is the danger to operators, cyanide gas being deadly.

Royal Recognition of Gardening.—Amidst the multifarious duties in connection with his exalted position at the present time, it is a pleasure to record that his Majesty King Edward VII. has had the grace to remember those who have served him and our lamented Queen in their various humble responsibilities. On the morning of the removal of the mortal remains of our late Sovereign, his Majesty personally presented Mr. G. Nobbs, head gardener at Osborne, with a gold breast pin in recognition of services rendered in connection with the obsequies of his late royal mistress. The pin is a crown of sapphires surmounting the interwoven letters V.R.I. in pearls. Mr. Nobbs has had the management of the floral arrangements of the Chappelle Ardente. It is such marks as this royal recognition that endear the Royal Family to those who have the honour of serving under them.—C. ORCHARD.

The Royal Horticultural Society.—The annual meeting of Fellows will be held at the offices of the society, 117, Victoria Street, Westminster, on Tuesday, February 12th next, at 3 P.M. At it the report of the Council will be submitted. The report states that the past year marks an era in the history of the society owing to the grant to it of a New Charter (the third) by Her late Majesty the Queen. The issue of the list of certificated plants, a labour involving much labour and research, is also a noteworthy achievement. The Council is pleased to point out the good work which is being done by the students at Chiswick under the superintendence of Mr. Wright, resulting in a visible attainment of academical honours and substantial emoluments outside. Eighteen gold medals, 22 silver cups, and 962 other awards were made at the society's exhibitions, 95 cottagers' societies received Banksian medals, and Miss E. Welthin Winlo a silver-gilt Flora medal. As an object-lesson in British fruit cultivation the annual show at the Crystal Palace stands unrivalled, and is of national import. Those who have visited it from year to year cannot fail to have been impressed by the wonderful advance which has been made in the quality of the hardy fruits exhibited, and of its importance on the fruit-growing industry in this country. The Council invite Fellows and their friends to support them in their efforts to maintain and improve this exhibition by subscribing to its funds, for the continuance of the show is absolutely dependent on at least £100 being raised by subscription each year towards the prize fund, and this question will in coming years be even more pressing, as the directors of the Palace have signified to the Council that they feel compelled to decrease their contribution by £50. The Council would point out that this is not a local show with a few large prizes, but that a large number of small prizes have been provided in order to secure the best fruits in each section; special prizes have been allotted to market growers; and counties have been grouped in such a way that growers should not have to compete with exhibitors from localities more favoured by climatic conditions. The Council have the

sad duty of recording the death of seventy-nine Fellows during the year, and among them they regret to find the names of his Grace the Duke of Wellington, the Earl of Harrowby, Sir William Cunliffe Brooks, Admiral Sir Henry Fairfax, K.C.B., General Pitt Rivers, F.R.S., Edward Pynaert, R. D. Blackmore, Wellwood H. Maxwell, R. Milne Redhead, John Laing, V.M.H., John Fraser, V.M.H., E. J. Lowe, F.R.S., W. Vanner, W. A. Gillett, A. De la Devansaye, Mrs. Abbott, and Miss Mary J. King. Also the deaths of two of the Council—Mr. T. B. Haywood and Mr. Philip Crowley. The Council have appointed the Right Hon. the Earl of Ilchester to the seat on the Council rendered vacant by the resignation of Mr. Arthur Sntton, V.M.H., and Mr. George Bunyard, V.M.H., to the vacancy caused by the death of Mr. Haywood. They have also appointed Mr. Gurney Fowler treasurer provisionally until the annual meeting.

Newcastle Flower Shows.—The very ancient horticultural and botanical society of this busy northern town is holding two exhibitions this summer, of which the first is fixed for April 9th and 10th in the Town Hall and Corn Exchange, and the second on July 23rd and 24th in Leazes Park. Excellent prizes for practically everything that is in season about the dates of the shows are offered, and it is hoped that they will be successful as well financially as horticulturally. The secretary is Mr. I. B. Reid, Mosley Chambers, 30, Mosley Street, Newcastle-on-Tyne, from whom all particulars may be obtained.

Bristol Gardeners' Association.—The fortnightly meeting of the society was held at St. John's Parish Room on Thursday, January 31st. Mr. A. J. Hancock presided over a good attendance. The lecture was given by Mr. A. Moore-Sara of Stoke Bishop on "Leaves." With the aid of diagrams, as well as many green and dried specimens, he was able to make the subject at once interesting and instructive. He dealt in very clear detail with the many and varied forms of leaves, their arrangements, the leaf veins, leaf appendages, method of water secretion, and the action of chlorophyll. Mr. Moore-Sara's lecture was much appreciated, he being heartily thanked for it. Prizes for two foliage plants suitable for table decoration were secured by Messrs. Sutton, Shaddick, and Price. Certificates of merit went to Mr. White for *Dendrobium nobile*, and Mr. Quick for *Lælia anceps*.

Beckenham Horticultural Society.—On Friday last Mr. F. G. Cogger, gardener to H. Potter, Esq., Lawn Road, Beckenham, gave a very practical paper on the "Propagation and Culture of Crotons," to a good attendance of members. The minimum temperature most suitable was named at 60° during the winter, a light shade being given during extreme sun heat in summer, ventilation, chiefly by bottom ventilators, thorough syringing at all times, except when temperatures rather low, and a compost of two parts fibrous loam, one part peat, with a liberal addition of coarse sand. In propagating large tops ringing should be practised, first using a small pot split in halves, filling this firmly with sphagnum moss and sand. When well rooted a larger pot may be substituted. A good discussion followed. Mr. G. Day placed upon the table *Lælia anceps Stella*, and *Lælia anceps Dawsonia*. On Friday, the 15th inst., Mr. H. Cooper, the respected chairman of the society, will discourse on the burning question, "Fifty Years' Stoking Experience."—T. C.

Hessle Gardeners' Mutual Improvement Society.—The second series of lectures given at the society's meeting, January 22nd, by Mr. Gaut, Horticultural Instructor from the Yorkshire College, Leeds; the Rev. A. Wordsworth Savory, M.A., presided. Mr. Gaut lectured on "The Principles and Practice of Propagation," illustrated by lantern views. The lecturer's remarks on the methods of budding and grafting proved both interesting and instructive, and brought forward a thoroughly profitable discussion. The third lecture was given on January 29th, at which the Rev. A. Wordsworth Savory, M.A., presided. "The Principles and Practice of Pruning for the Production of Fruit of a Superior Quality," was the subject, illustrated by lantern views. The lecturer said that the first step in pruning in order to obtain superior fruits is the thinning of all branches so as to permit a free circulation of light and air to all parts of the tree. The first lesson to be learnt is to understand whether the trees are to be pruned for the production of fruit on the young wood or the old fruit spurs. In either case we must allow the leaves plenty of space to breathe. —J. F. D., Yorks.

Messrs. Protheroe & Morris's Register for 1901.—We have to acknowledge the receipt of this very useful publication for all those in search of a nursery, market garden, florist or seed business, or of a partnership in connection therewith, which issues from the offices of this well-known firm at 67, Cheapside, London.

Roses and St. George's Day.—Mr. Francis G. Heath writes as follows:—Will you kindly permit me, on behalf of the committee of the Society of St. George, to express the hope that Rose growers generally will endeavour to provide for the large demand which it is hoped and believed will be ready on the forthcoming St. George's Day, April 23rd, for red and white Roses. Our honorary secretary, Mr. Howard Ruff, 241, Shaftesbury Avenue, Bloomsbury, would be pleased to give any information as to the patriotic object of our society.

Subduing the Elements.—The International Congress assembled to consider the employment of heavy guns for the purpose of warding off hailstorms held its open sitting at Rome recently, about a thousand delegates, notably French and Austrian, being present. Several speeches were delivered. Signor Rava, Under Secretary of State for Agriculture, announced that the Italian Government intended to establish a meteorological observatory on Monte Rosa. The Congress then began to deal with the work before it. The delegates inspected the cannon which it is proposed to use for the dispersal of hailstorms.

Hanley Floral Fete.—This enterprising society is now issuing its schedule for the forthcoming exhibition, which will be held in the park near Stoke-on-Trent Station. Unfortunately the precise date is not given in the advance proofs before us, but it will be advertised in due course. The principal class appears to be the new century class for the best arranged collection of British garden produce to occupy a table space of 15 feet by 4 feet. Fruit, vegetables, plants, and flowers must be represented in quantities as follows:—Nine varieties of fruit in not less than six kinds and not more than two varieties of a kind; black and white Grapes one variety of each; nine varieties of vegetables, in not less than six kinds; twelve plants in pots, not exceeding 5½ inches in diameter; cut flowers in any form; the whole to be arranged according to the taste of the exhibitor. In judging it will be an instruction to take into consideration the quality of the whole produce, the harmonious blending, and general arrangement for effect. The prizes are:—First prize, £12 and silver cup value £6 6s.; second prize, £8 and special prize value £3 3s.; third prize, £5 and special prize value £2 2s.; and fourth prize, £3 and special prize, pair Wedgwood's Jardinières, value £1 10s. There should be a splendid competition.

Sussex Weather.—The total rainfall at Ahhots Leigh, Hayward's Heath, for the past month was 0.97 inch, being 1.21 inch below the average. The heaviest fall was 0.27 inch on the 19th. Rain, or snow, fell on thirteen days. The maximum temperature was 49° on the 17th, 22nd, and 30th; the minimum 22° on the 6th and 7th. Mean maximum, 43.20°; mean minimum, 32.25°; mean temperature, 37.72°; slightly above the average. An average month. Frost on thirteen mornings keeps vegetation in check, and promises a good seed bed for spring. —R. I.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1901.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
January.		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
February.										
Sunday ..27	S.W.	deg. 51.9	deg. 47.9	deg. 54.6	deg. 39.3	ins. 0 17	deg. 42.0	deg. 43.8	deg. 45.8	deg. 25.2
Monday ..28	S.W.	36.5	35.3	40.6	36.2	0.03	42.2	44.1	45.8	31.3
Tuesday 29	W.N.W.	34.6	31.2	38.6	30.5	—	40.2	43.7	45.9	23.3
Wed'sday 30	W.S.W.	34.9	32.8	40.7	33.4	—	38.7	43.0	45.8	25.4
Thursday 31	W.S.W.	32.4	31.3	37.6	29.9	—	38.1	42.3	45.8	22.4
Friday .. 1	W.S.W.	32.1	31.2	40.1	28.0	—	37.6	41.8	45.5	19.4
Saturday 2	S.E.	35.7	33.8	42.4	29.7	—	37.0	41.3	45.3	20.7
MEANS ..		36.9	34.8	42.1	32.4	Total 0.20	39.4	42.9	45.7	24.0

The first part of the week was remarkable for a heavy gale from W.N.W., which raged for two days and nights, and the latter part was dull and cold with brief intervals of bright sunshine.



Royal Gardeners' Orphan Fund.

I SEE by the voting papers now sent out to the subscribers to the above fund that on Friday, the 15th inst., twelve children out of fourteen candidates are to be elected to share in its great benefits. May I, as one who has ever taken the deepest interest in this fund, suggest, through your columns, that the whole fourteen candidates be elected, in honour of the accession of our royal patroness, Queen Alexandra? I feel sure that every subscriber will gladly see this done at the next annual meeting.—JOHN MILES, *Southampton*.

Apples in India.

I AM very much obliged to you for all the trouble you took over the Apple I sent you, and which you remarked on at page 454 of 15th November. The original trees were got out by the Government of India for the Rainkhet Nursery, and from this nursery I got my plants. I do not know from what firm at home they were procured, but I have heard that it was a first-class one. I enclose a list of the varieties, as it limits the range in looking for a name, and as the names you suggest are not in this list you may be enabled to spot the Apple from it. I find that in almost every one of which I have the name there are differences from the description in Dr. Hogg's Manual, due no doubt to the great difference in climate and the elevation. We cannot get the artificial manures you mention here at any reasonable price; there is only one blast furnace in India, and it is over 1000 miles distant. They do not grind up their slag, and if they did I do not think that they would get a market for it. I might get bones and pound them up, but this is laborious, and sulphuric acid is too expensive to use. The only manure except farmyard manure is wood ashes. I employed a sweeper once thinking to try manure from the latrines. This man had no objection to deal with any kind of filth, but carry earth he would not do, and as there was not full work for him dealing with manure I had to dismiss him.

LIST OF VARIETIES.

Adam's Pearmain
Alfriston
American Mother
Annie Elizabeth
Ashmead's Kernel
Beachamwell
Bedfordshire Foundling
Bess Pool
Blenheim Pippin
Brabant Bellefleur
Bramley's Seedling
Brickley's Seedling
Cellini
Claygate Pearmain
Coe's Golden Drop
Court of Wick
Cox's Orange Pippin
D'Arcy Spice
Devonshire Quarrenden
Duke of Beaufort
Dumelow's Seedling
Dutch Mignonne
Early Harvest
Early Julyan
Early Strawberry
Fall Pippin
Fearn's Pippin
Gloria Mundi
Golden Harvey
Golden Russet
Gravenstein
Hambledon Deux Ans
Harvey's Wiltshire Defiance
Hawthornden
Herefordshire Pearmain
Irish Peach
John Gidley's Pearmain
Kerry Pippin
King of the Pippins
King of Tompkin's County

Lady Henniker
Lady Sudeley
Lord Burghley
Manks Codlin
Margaret
Margil
Nonpareil
Norfolk Beefing
Northern Greening
Northern Spy
Ord's Apple
Old
Oslin
Pearson's Plate
Peasgood's Nonesuch
Peck's Pleasant
Prince Bismarck
Red Astrachan
Redleaf Russet
Red Ingestrie
Reinette du Canada
Ribston Pippin
Rosemary Russet
Roundway Magnum Bonum
Russian Transparent
Rymer
Sam Young
Scarlet Nonpareil
Stirling Castle
Sturmer Pippin
Sandringham
Tyler's Kernel
Warner's King
White Astrachan
Winter Peach
Winter Pearmain
Winter Quoining
Worcester Pearmain
Yellow Ingestrie

A. CAMPBELL, *Dehra Dun, N.W. Prov. India.*

The Elusive Pear.

QUITE irrespective of the absolute failure of Pears this season we read so much of, as to their desirable keeping qualities being in abeyance, we are apparently "not in it," if records may be trusted, for we read in the "Athenæum" of December 5th, 1860, "A Pear is in its perfection for only three hours. Whenever I see one coming to its delicious maturity I watch it; I can feel it ripening and flavonring up, and at the very nick of time I take it off and eat it. The man who gets that Pear in the middle hour is a fortunate man, a very fortunate man." Surely it behoves us to bestir ourselves about the study of our home-made classics of fruit growing if we would not be left behind in the race with other nations. I wonder whether there is at present among the mortals a contemporary of our classic age to "spot" the man and to tell us who was the Aristotle of Pear philosophy; or was he a mean and miserly epicure, whose secret was left unrevealed and buried with him?—H. H. RASCHEN.

The Chairmanship of the R.H.S. Fruit Committee.

As you have given publicity to a letter from a writer who assumes the anonymous signature of "Nurseryman," but who, instead of fairly contesting the views I have in one or two cases put forward in your columns, in reference to the above subject, prefers to make a personal attack upon me, I feel entirely justified, on the principle of fair play, in requesting from you the fullest right to reply to him. But I am sensible of the fact that as your long time contributor over the signature of "A. D.," that there is not the least need I should defend myself from the aspersions of one who rather than sign himself boldly, prefers to hope to remain hidden under an anonym. Since that attack appeared, however, I have received a letter from an eminent nurseryman and friend who, wondering what this attack was all about, not only expressed his desire to be dissociated from it, but also holds that on the part of the writer it was a grossly unjust act to sign himself as "Nurseryman," on the ground that he left the entire nursery trade under the imputation of being libellers. "Surely," my correspondent adds, "this anonymous writer will, in justice to all nurserymen, declare himself." As I know who the writer is, I have told my kind correspondent, but I cannot tell all the trade in a private way. It remains therefore for the writer to do so, and then all the world can judge between me and he.—ALEXANDER DEAN.

Book Gardeners.

THOUGH I take a great interest in the Royal Horticultural Society's examination I have not yet entered; I may, however, do so, and I should not think, if I gained a certificate, that it would enable me to obtain a better position than those with none. Nor does the young man who spends hours at hard study, as "A Working Gardener" put it, find this irksome; it is pleasure. The knowledge gained by the study, not the certificate, will eventually prove to be so helpful to the student that he will never regret the hours so spent; the botany will make him more intimate with the plants he comes in contact with, increase his power of observation in the garden and outside; the chemistry will help him to understand what plants need in the way of food; the geology will teach all about the soils it will be his lot to have to manipulate. Your correspondent will say, But what good practically are these sciences to the gardener? Why, I reply, should not a gardener include the science as well as the practice?

Take now "A Working Gardener's" three R's. The young gardeners of the day are educated principally in village schools, and the knowledge there gained wants finishing. The boy leaves school at the age of fourteen, and perhaps in a few years forgets what he was taught. Almost 50 per cent. of our present young gardeners' writing is bad. Why is it? Ask a few of the young men you meet in "the bothy" to read aloud, and your correspondent would, I am sure, be surprised. They read with their eyes, and the theme is often lost to them. With regard to arithmetic, it is probable that they have not done a sum since they left school. One of these young gardeners just described becomes aware that he is getting behind the times. He reads more diligently; perhaps buys a pronouncing dictionary to further his studies. Presently he will buy an exercise book, firstly to write out "practical hints" that he thinks are good, and secondly to improve his handwriting. Soon he will want some popular work on "Gardening," and if he buys "Nicholson's Encyclopædia" he finds botanical phrases and words whose definition is not so explicit as found in books on botany, so an elementary botany is added to his growing library. Gradually our young gardener is launched into the scientific side of gardening. Not only does he enjoy it, but he is made the better gardener thereby.—KENT.

Culture of Peas.

PEAS, dwarf, medium growers, and tall varieties, are all cultivated with varying degrees of success in the majority of gardens. Few, indeed, are the persons who do not enjoy a dish of sweet, tender, delicious garden Peas when they are ready in the month of June. Peas are amongst the choicest of vegetables, and great efforts are made by gardeners to produce crops early in the open ground. During the month of February the early sorts may be sown on a warm sheltered border, choosing those varieties of a dwarf habit, but which are known to be productive when well and liberally treated.

Chelsea Gem is an extra early variety growing about 15 inches high, and forms compact, short-jointed haulm. The Peas are of fair size and excellent quality and as the pods are produced in pairs, the yield of a well-cultivated row is abundant. A good variety to follow the preceding is Gradus, a distinct early marrow, having large pods well filled. The height Gradus attains to is 3 feet.

Instead of sowing the seed direct on a warm border and trusting to weather, circumstances, and due attention, the seed may be sown in pots or boxes under glass, so as to forward the plants to a fair height; gradually harden and plant out. Long, narrow boxes, are really the best receptacles. They should have movable ends or sides so that the plants and roots can slide out without injury to one or the other. It is a good plan to sow the seed on strips of turf placed grass side downwards in the box, scooping out a drill in the turf to receive the seed, which should not be sown thickly, and cover with fine soil. Water, and place the boxes in a cool house near the glass, and where air can reach them in abundance after the seed has germinated.

If the plan of sowing in pots is adopted, use 3½ or 4-inch pots. Drain the base with a piece of turf, and fill the pots with good loamy soil, adhesive rather than light, so as to produce a sturdy growth. Place the seeds an inch apart, and cover firmly with fine soil. When the plants either in pots or boxes begin to grow freely, a position in a frame is more suitable than one in a house where they would rapidly become drawn. Keep the soil moist, and take every favourable opportunity to admit air freely to them, as success largely depends upon maintaining a compact growth until suitable weather occurs to plant out finally.

The final planting may take place about the end of March or early April. A warm, sheltered border is imperative, and protection as soon as planted is indispensable. The protection should not be anything that will exclude light from the young plants, but something that serves to break the force of cutting east winds, hence the most protection is necessary on the windward side. Feathery branches of evergreen shrubs serve very well for this purpose, but the rows ought first to have the necessary quantity of permanent sticks placed along each side. In the event of very untoward weather it may be compulsory to give protection with mats for a short time to prevent them receiving serious injury. Peas, either planted or sown on a warm border, being as a rule early varieties, and dwarf in habit, may be arranged in rows 2 feet apart. Slightly taller varieties may be 3 feet.

The ground must be kept stirred about them to encourage growth, and as the Peas come in bloom mulch with manure on each side the rows. Beginning in the middle of February and successionally every fortnight until May, one or several rows of second early and main crop varieties should be sown.

The following are some of the best standard sorts adapted for various soils and positions, but as opinions and tastes differ the selection may not be applicable to all, but it is easy to substitute the more favoured varieties. Duke of Albany, Prince of Wales, Advancer, Telegraph, Telephone, Stratagem, and Fillbasket are varieties difficult to excel when grown in the best possible manner. For late crops Veitch's Autocrat has won golden opinions as an unrivalled leading variety. It has proved to be excellent for several years. Another good and indispensable variety for late use is Ne Plus Ultra.

For the maincrop varieties a more open position in the garden is requisite. The soil should be worked deeply, and enriched well with manure. Trenching and burying the manure low down is the best and most thorough method of preparing a site for Peas. Ground which has previously been well worked for some preceding crop that has not abstracted food too freely will produce good results. Celery trenches are usually good positions for Peas, because of the extra depth which the soil has been worked or broken up in the process of earthing. Trenching, when this method of preparation is adopted, should be carried out to the depth of three spits, placing the manure between the second and third spits. Horse manure is undoubtedly the best for heavy soils, while for light and sandy ground that of a heavy and cooling character, such as cow and pig manure, are more useful.

Solid and natural manures are specially useful as food for the roots when they begin to descend in search of food as well as moisture. It is much better that the roots should go down instead

of ramifying too much on the surface, where the soil dries and causes failure. A mixture, however, of chemical manures may be worked into the surface previous to sowing. The following is excellent:—Half-pound each of kainit, nitrate of soda, and superphosphate, adding 3 lbs. of salt. Apply half this mixture to a square rod of ground before sowing, and a similar quantity as soon as the plants reach a height of 6 inches. Guano, or some of the advertised artificial manures, may also be scattered along the drills and covered with soil, using the manure at the rate of a pound per square yard.

Give medium and tall-growing Peas plenty of room between the rows. Not less than 4 feet between the rows should be given when the Peas attain the height of 4 or 5 feet, and 6 feet distance for those growing 5 or 6 feet. Wider distances than these are frequently given, the intervening space being cropped with other vegetables. Draw the drills for sowing with a draw hoe 6 inches wide and 3 inches deep. Place the seeds over the space about an inch apart. Should mice be troublesome moisten the seeds before sowing, and rub them in dry red lead.

Immediately the seed germinates other enemies in the shape of birds will nip off the plumules almost before they issue through the soil. It is desirable, therefore, to give protection in time. This is best done by covering the rows with the arched wire protectors expressly made for this purpose. Protection, however, is often effectually afforded by stringing black cotton over the rows, indeed in the absence of wire guards the strings of cotton tightly drawn an inch apart well over the rows is the next best method. Semi-circular boards studded on the upper side with nails should be affixed at each end of the rows to attach the cotton to, and some support must be afforded in the middle to prevent sagging. When the Peas have reached the height of 2 or 3 inches they are usually safe from injury by birds. Then the wire guards may be withdrawn, but it is not necessary to remove cotton as the Peas will grow through it.

Draw earth to each side of the rows, and then proceed to place sticks to them, using those of a length sufficient for the height of the variety. Flat branching sticks are the best. Fill up the bare spaces at the base with twiggly pieces, and cut the tops level and neatly.

Peas in full growth abstract much moisture from the soil, hence in dry periods recourse must be had to applying water and liquid manure copiously. The labour, however, in this respect may be lessened by laying down on each side the row a rich mulching of manure, doing this when the Peas come in flower. It is from the latter period to the time of gathering that food and moisture should not be lacking. Previous to watering applications of chemical manure may be given, and they will wash into the soil and benefit the roots.—E. D. S.

Spring-flowering Magnolias.

THE free-flowering qualities of many of the Magnolias place them amongst the most popular plants for the adornment of the outdoor garden, whilst their fragrance forms an additional recommendation in their favour. Between the early and late-flowering sections a great difference exists in the way in which the flowers are produced. In the late-flowering section the blossoms are usually borne a few at once over a period of several months, it rarely happening that the majority are open at any one time. With the spring-flowering group the exact opposite is the case, the majority of the flowers opening at or about the same time, making one grand display extending over a period of three or four weeks. The following species and hybrids may be included under the above heading.

M. conspicua ("The Yulan").—A fairly well-known plant introduced from China and Japan upwards of a century ago. In China it is said to grow from 20 to 40 feet in height; here it rarely reaches 20 feet. The flowers are of thick texture, glistening white and fragrant. They are produced in such profusion as to quite hide the leafless branches. Large specimens are to be seen in several gardens about London, notably at Kew, Syon House, and Gunnersbury Park.

M. obovata.—This is a free-flowering Chinese species, forming a large bush 5 or 6 feet high with the same diameter. The flowers are large, cup-shaped, white inside, deep purple outside, and delightfully fragrant.

M. stellata.—One of the most beautiful of all flowering shrubs. The flowers are star-shaped, 4 inches across, and borne with the greatest freedom. They also have the additional advantage of being very sweetly scented. In habit it forms a dense bush 4 to 5 feet high. It has been in cultivation for a considerable time, but like many other Japanese plants, it is only within the last ten years that it has become widely

known. In addition to being a good outdoor plant it is most useful for forcing.

Between the two former species a number of hybrids have been raised which may be well represented by the two following—*M. Lennei*, having immense, Tulip-shaped flowers, white inside, and bright reddish

from 75 to 80 feet is completely smothered with blossoms. In the same place fine specimens of *M. conspicua* and *M. obovata* are to be seen, while in other parts of the gardens large beds of *M. stellata* are sufficient testimony of its worth.

To be successful with these early Magnolias they should be given



MAGNOLIA CONSPICUA.

purple outside; and *M. Soulangeana*, an older and better known plant, growing as tall as *M. conspicua*, with a more compact and bushy head. The flowers are white inside, and tinged with purple outside. A visit to Kew would convince anyone of the worthiness of this plant. In the Azalea garden a specimen 15 or 16 feet high, with a circumference of

a position sheltered from cold winds and shaded from early morning sun, for when in flower the blossoms are easily damaged by cold winds or rapid thawing after a frosty night. A mixture of peat, loam, and leaf mould in well drained ground should be given, and after once planting the roots should never be disturbed.—W. D.

Royal Horticultural Society.

Scientific Committee, Jan. 29th.

Present: Dr. M. T. Masters (in the chair), Mr. Bowles, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.

Bryonia dioica root.—Mr. W. G. Smith sent an enormous root of the common Bryony. He says that the weight, after being kept for two months in a dry room, was just over 21 lbs., and had not the ends of thick branching roots been broken off it would have been at least 5 lbs. heavier. The length of its broken condition was 2 feet; the circumference at the middle was 22½ inches. It was dug out of brick-earth at Caddington Hill, near Dunstable. It appears to much exceed the average size, for Dr. R. Hogg writes in his "Vegetable Kingdom": "The roots are of an immense size, sometimes a foot or 2 feet long, and as thick as a man's arm." It is occasionally offered for sale as the "Mandrake," but the latter is not a British plant. Though the root abounds in starch, which could be extracted by grating it to a pulp and straining with cold water; but the juice is decidedly poisonous, as are also the berries of the Bryony.

Abies lasiocarpa var. *arizonica*.—Foliage and bark of this new variety were sent by Herr H. Henkel, from Darmstadt. Though the species ranges from Oregon to New Mexico, this tree only occurs on the mountains of Arizona. The bark is remarkable in being of a cream colour and corky in nature. The foliage is bright glaucous green above, but white from a mossy bloom below, probably due to its mountain habitat. Herr Henkel observes that he has succeeded in importing and establishing this tree, which he names *Abies arizonica*, Merriam, var. *argentea*. The plants were collected at an altitude of from 7250 to 10,000 feet, the temperature being as low as - 25° to - 30° (C.).

Australian Rhubarb.—Specimens were sent by Mr. Sutton of this Rhubarb alluded to at the last meeting. The stems are very slender, are about a foot long, of a bright scarlet.

Pinus austriaca attacked by beetle.—A branch perforated by some beetle was received from a resident of Fordington, Dorchester. It was sent to Mr. McLachlan for determination.

Crocus species and varieties.—An interesting series was exhibited by Mr. E. A. Bowles of Myddelton House, Waltham Cross, Herts, who contributed the following particulars:—

C. biflorus v. *argenteus*.—An abnormal bloom with eight perianth segments and five style branches. *V. estriatus*.—The unstriped form from Florence. *V. Leichtlini*.—A small-flowered form intermediate between *v. estriatus* and *v. nubigenus*, pale blue, external surface of outer segments yellowish with broad band of pale blue down the centre; anthers of a curious shade of greenish grey. This tendency to melanism in anthers of *Crocus* of the section *annulati* of Maw was further illustrated by specimens of *C. Crewei*, in which the anthers are a deep chocolate, and *C. chrysanthus* vars. *fuscotinctus* and *fuscolineatus*, with anthers of a dark smoke colour and the typical form of *C. chrysanthus*, in which the barbs at base of the anthers are tipped with black.

C. Korolkowi in two vars. *α*. The type as distributed by Dr. Regel, and figured by Maw; a small, shy flowering, late form; external surface of outer segments grained with rich brown, throat externally nearly black. *β*. Larger, paler, very floriferous and robust in habit; in bloom three weeks earlier; external graining grey, greenish blue at throat.

C. ancyrensis.—Type and a specimen externally feathered with brown, a variation not hitherto noticed in this species.

Crocus Fleischeri, a delicate species with long, narrow perianth segments, white, the three outer externally lined purple; *v. albus*, without the external purple markings except at the throat, and contrary to rule with albino forms, has the appearance of being a more robust form with wider perianth segments.

C. Balansæ, an abnormal bloom, semi-double, of the form with outer segments externally rich mahogany colour.

C. dalmaticus, the true plant, with large, very pale mauve flowers, outer surface of outer segments pale buff, veined with grey at the base.

C. Tomassinianus, pale and dark vars.

C. Imperati, several varieties.

All from open ground except *Fleischeri* and *Korolkowi* type, which were grown in a cold frame.

The Committees for 1901.

FULL particulars of the exhibitions of the Society can be had from the "Arrangements for 1901," in which are also given lists of the various committees, and these we reprint for the benefit of our readers.

Fruit and Vegetable Committee.

Chairman.—Bunyard, Geo., V.M.H., Maidstone, Kent.

Vice-Chairmen.—Balderson, H., Corner Hall, Hemel Hempstead.
Pearson, A. H., Pelham Road, Sherwood Rise, Nottingham.

Secretary.—Wright, S. T., R.H.S. Gardens, Chiswick.

Basham, J., Fair Oak, Bassaleg, Newport, Mon.

Bates, W., The Gardens, Cross Deep, Twickenham.

Beckett, E., Aldenham House Gardens, Elstree.

Blaker, Dr. E. S., The Cedars, East Grinstead.

Cheal, Joseph, Lowfield, Crawley, Sussex.

Coomber, T., The Hendre Gardens, Monmouth.

Crump, W., V.M.H., Madresfield Court Gardens, Malvern.

Dean, A., 62, Richmond Road, Kingston, S.W.

Divers, W. H., Belvoir Castle Gardens, Grantham.

Esling, H., Hillview, Croft Road, Carshalton.

Farr, W., Spring Grove House Gardens, Isleworth.

Fyfe, W., Lockinge Park Gardens, Wantage.

Gleeson, M., Warren House Gardens, Stanmore.

Herrin, C., Lydhurst, Hayward's Heath, Sussex.

Iggulden, W., North View, Frome, Somerset.

Jaques, J., Waddesdon Manor Gardens, Aylesbury.

Kelf, Geo., The Gardens, South Villa, Regent's Park, N.W.

Lane, Fred. Q., Berkhamsted.

Markham, H., Wrotham Park Gardens, High Barnet.

McIndoe, James, V.M.H., Hutton Hall Gardens, Guisborough.

Miles, G. T., Wycomb Abbey Gardens, High Wycomb.

Mortimer, S., Rowledge, Farnham, Surrey.

Norman, G., Hatfield House Gardens, Hatfield.

Parker, R., Goodwood Gardens, Chichester.

Pope, W., Highclere Gardens, Newbury.

Ponpart, W., Marsh Farm, Twickenham.

Reynolds, G., The Gardens, Gunnersbury Park, Acton, W.

Rivers, H., Somers, Sawbridgeworth.

Smith, James, V.M.H., The Gardens, Mentmore, Leighton Buzzard.

Veitch, J. H., King's Road, Chelsea.

Veitch, P. C. M., Exeter.

Ward, A., Trent Park Gardens, New Barnet.

Wilks, Rev. W., M.A., Shirley Vicarage, Croydon.

Willard, Jesse, Holly Lodge Gardens, Highgate, N.

Woodward, G., Barham Court, Teston, Maidstone.

Wright, John, V.M.H., 8, Rose Hill Road, Wandsworth, S.W.

Wythes, G., V.M.H., Syon House Gardens, Brentford.

Scientific Committee.

Chairman.—Sir J. D. Hooker, K.C.S.I., C.B., F.R.S., V.M.H., Sunningdale.

Vice-Chairmen.—Foster, Sir M., K.C.B., V.M.H., M.P., Sec. R.S., Great Shelford, Cambridge.

Masters, Maxwell T., M.D., F.R.S., &c., Mount Avenue, Ealing, W.

Thiselton-Dyer, Sir W. T., K.C. M.G., F.R.S., Kew.

Hon. Sec.—Rev. Prof. G. Henslow, M.A., V.M.H., F.L.S., 80, Holland Park, W.

Baker, J. G., F.R.S., V.M.H., 3, Cumberland Road, Kew.

Balfour, Prof. I. B., F.R.S., V.M.H., Botanic Gardens, Edinburgh.

Bateson, W., F.R.S., Merton House, Grantham, Cambs.

Bennett, A. W., F.L.S., 6, Park Village East, N.W.

Bennett-Poë, John T., 29, Ashley Place, Westminster.

Bonavia, Dr. E., Westwood, Richmond Road, Worthing.

Boulger, Prof. G. S., 34, Argyll Mansions, Kensington, W.

Bowles, E. Augustus, Myddleton House, Waltham Cross.

Brown, Dr. Horace, F.R.S., 52, Nevern Square, Kensington, S.W.

Burbridge, F. W., M.A., V.M.H., Trinity College Gardens, Dublin.

Chapman H., Cambridge Lodge, Flodden Road, Camberwell, S.E.

Church, Prof. A. H., M.A., F.R.S., Shelsley, Kew Gardens.

Cooke, M. C., M.A., LL.D., 53, Castle Road, Kentish Town, N.W.

Darwin, Francis, F.R.S., Wychfield, Huntingdon Road, Cambridge.

Dod, Rev. C. Wolley, M.A., V.M.H., Edge Hall, Malpas, Cheshire.

Douglas, James, V.M.H., Great Bookham, Surrey.

Druery, C. T., F.L.S., 11, Shaa Road, Acton, W.

Ellacombe, Rev. Canon, Bitton, Bristol.

Elwes, H. J., F.R.S., V.M.H., Colesborne, Andoversford, Glos.

Engleheart, Rev. G. H., M.A., V.M.H., Appleshaw, Andover.

Ewbank, Rev. H., St. John's, Ryde.

Farmer, Prof. J. B., M.A., Royal College of Science, South Kensington.

Godman, F. DuCane, F.R.S., 10, Chandos Street, Cavendish Square.

Gordon, George, V.M.H., Priory Road, Kew.

Groom, Prof. Percy, F.L.S., Hollywood, Egham.

Hartog, Prof., D.Sc., M.A., Queen's College, Cork.

Hogg, R. A. Milligan, 12, Mitre Court Chambers, Fleet Street.

Holmes, E. Morell, F.L.S., Ruthven, Sevenoaks.

Houston, D., F.L.S., Technical Laboratory, Chelmsford.

Hurst, Captain C., Burbage Grove, Hinckley.

Im Thurn, E. F., C.B., 23, Edwardes Square, Kensington, W.

Lindsay, R., Murrayfield, N.B.

Llewelyn, Sir J. T. D., Bart., F.L.S., Penllergaer, Swansea.

Lynch, R. Irwin, A.L.S., Botanic Gardens, Cambridge.

Massee, George, F.L.S., Gateacre, Sandycroft Road, Kew.

Mawley, Ed., Rosebank, Berkhamsted.

Scientific Committee—(continued).

- McLachlan, R., F.R.S., Westview, Clarendon Road, Lewisham, S.E.
 Michael, A.D., F.L.S., Cadogan Mansions No. 9, Sloane Square, S.W.
 Morris, D., C.M.G., M.A., F.L.S., D.Sc., Imperial Agricultural Department for the West Indies, Barbados.
 Müller, Hugo, Ph.D., F.R.S., 13, Park Square East, Regent's Park.
 Murray, George, F.R.S., Natural History Museum, S.W.
 Newstead, Robert, F.E.S., Grosvenor Museum, Chester.
 Nicholson, Geo., Royal Gardens, Kew.
 O'Brien, James, V.M.H., Harrow-on-the-Hill.
 Odell, J. W., The Grove, Stanmore, Middlesex.
 Oliver, F. W., D.Sc., F.L.S., 2, The Vale, Chelsea, S.W.
 Plowright, C. B., F.L.S., 7, King Street, King's Lynn.
 Rendle, Dr. A. B., Natural History Museum, S.W.
 Russell, W. J., F.R.S., Ph.D., 34, Upper Hamilton Terrace, N.W.
 Salmon, Ernest S., Charlton House, Kew.
 Saunders, Geo. S., 20, Dents Road, Wandsworth, S.W.
 Scott, D. H., M.A., Ph.D., F.R.S., F.L.S., The Old Palace, Richmond, S.W.
 Scott-Elliott, G. F., M.A., B.Sc., F.L.S., St. Colme, Aberdour, Fife.
 Shea, Charles E., The Elms, Fooks Cray, Kent.
 Smith, Martin R., Warren House, Hayes, Kent.
 Smith, William G., Ph.D., Yorkshire College, Leeds.
 Smith, Worthington G., F.L.S., 121, High Street, Dunstable.
 Sutton, A. W., V.M.H., F.L.S., Reading.
 Veitch, H. J., F.L.S., King's Road, Chelsea, S.W.
 Ward, Prof. Marshall, F.R.S., Botanical Laboratory, Cambridge.
 Wilks, Rev. W., M.A., Shirley Vicarage, Croydon.
 Wilson, Geo. F., F.R.S., V.M.H., Heatherbank, Weybridge Heath.
 Worsdell, W. C., Jodrell Laboratory, Royal Gardens, Kew.
 Worsley, A., Mandeville House, Isleworth.

Floral Committee.

- Chairman.*—Marshall, William, Auchinraith, Bexley.
Vice-Chairmen.—Paul, George, V.M.H., The Old Nurseries, Cheshunt.
 Shea, Charles E., The Elms, Fooks Cray.
Secretary.—T. Humphreys, R.H.S. Gardens, Chiswick, W.
 Bain, W., The Gardens, Burford Lodge, Dorking.
 Barnes, N. F., Eaton Gardens, Chester.
 Barr, W., 12, King Street, Covent Garden, W.C.
 Blick, Chas., The Warren, Hayes Common, Beckenham.
 Cant, Frank, Braiswick, Colchester.
 Cook, E. T., 24, Addison Road, Bedford Park, Chiswick.
 Cutbush, H. J., Highgate, N.
 Dean, R., V.M.H., 42, Ranelagh Road, Ealing, W.
 Dixon, C., Holland House Gardens, Kensington.
 Druery, C. T., F.L.S., V.M.H., 11, Shaa Road, Acton, W.
 Fielder, C. R., The Gardens, North Mymms Park, Hatfield.
 Fife, Robert, Messrs. Dobbie, Orpington, Kent.
 Fitt, J. H., The Frythe Gardens, Welwyn.
 Fraser, John, 4, Willow Cottages, Kew.
 Gordon, G., V.M.H., Endesleigh, Priory Park, Kew.
 Howe, W., Park Hill Gardens, Streatham Common.
 James, W. J., Woodside, Farnham Royal, Slough.
 Jeffries, C., Boston House Gardens, Brentford.
 Jenkins, E. H., Queen's Road, Hampton Hill, Middlesex.
 Jennings, J., Ascott Gardens, Leighton Buzzard.
 Jones, H. J., Ryecroft, Hither Green, Lewisham.
 Ker, R. Wilson, Basnett Street, Liverpool.
 McLeod, J., Dover House Gardens, Roehampton.
 May, H. B., Dyson's Lane, Upper Edmonton.
 Mawley, E., Rosebank, Berkhamsted.
 Molyneux, E., V.M.H., Swanmore Park, Bishop's Waltham.
 Nicholson, G., V.M.H., Royal Gardens, Kew.
 Notcutt, R. C., Woodbridge, Suffolk.
 Page-Roberts, Rev. F., Halstead Rectory, Sevenoaks, Kent.
 Pawle, J. D., 12, Stanley Gardens, Willesden Green, N.W.
 Pearson, C. E., Lowdham, Nottingham.
 Reuthe, G., Wensleydale, Hanworth Road, Feltham, Middlesex.
 Salter, C. J., Woodhatch Gardens, Reigate.
 Selfe-Leonard, H., Hitherbury, Guildford.
 Thomas, Owen, V.M.H., Royal Gardens, Windsor.
 Thomson, W. P., 25, Rolls Lane, Chiswick, W.
 Turner, H., V.M.H., Slough.
 Walker, J., Ham Common, Surrey.
 Watson, W., Royal Gardens, Kew.

Orchid Committee.

- Chairman.*—Veitch, H. J., F.L.S., King's Road, Chelsea, S.W.
Vice-Chairmen.—Fowler, J. Gurney, Glebeland, Woodford.
 Lawrence, Sir Trevor, Bart., V.M.H., 57, Princes Gate, S.W.
 Schröder, Baron, V.M.H., The Dell, Staines.
Hon. Sec.—O'Brien, James, V.M.H., Marian, Harrow-on-the-Hill.
 Ashworth, E., Harefield Hall, Wilmslow, Cheshire.
 Balfour, Prof. Bayley, F.R.S., V.M.H., Edinburgh.
 Ballantyne, H., The Dell Gardens, Staines.
 Bilney, W. A., Fir Grange, Weybridge.
 Bond, T. W., Elstead House Gardens, Godalming.
 Brooman-White, R., Arddarroch, Garelochhead, N.B.

Orchid Committee—(continued).

- Chapman, H., Cambridge Lodge, Flodden Road, Camberwell, S.E.
 Colman, J., Gatton Park, Surrey.
 Cobb, W., 33, Broadwater Down, Tnnbridge Wells.
 Cookson, Norman C., Oakwood, Wylam, Northumberland.
 Crawshaw, de Barri, Rosefield, Sevenoaks.
 Douglas, James, V.M.H., Edenside, Great Bookham.
 Gabriel, J. T., 32, Palace Road, Streatham Hill, S.W.
 Gratrix, S., West Point, Whalley Range, Manchester.
 Hay, W. H., Oakley Park, Eye, Suffolk.
 Hill, E., Tring Park Gardens, Tring.
 Hislop, A., Bletchley Park Gardens, Bletchley.
 Latham, W. B., Botanic Gardens, Birmingham.
 Law-Schofield, G. W., New Hall Hey, Rawtenstall, Manchester.
 Little, H., Baronsalt, The Barons, E. Twickenham.
 Lucas, C. J., Warnham Court, Horsham.
 Moore, F. W., V.M.H., Botanic Gardens, Glasnevin, Dublin.
 Odell, J. W., The Grove, Stanmore, Middlesex.
 Pitt, H. T., Rosslyn, 57, Stamford Hill, N.
 Pollett, H. M., Fernside, Bickley, Kent.
 Potter, J. Wilson, Elmwood, Park Hill Road, Croydon.
 Rehder, Frank, 29, Mincing Lane, E.C.
 Rochford, Thomas, Turnford Hall, Broxbourne.
 Sander, F., V.M.H., St. Albans.
 Smee, A. H., The Grange, Hackbridge, Surrey.
 Thompson, W., Walton Grange, Stone, Staffs.
 Thorne, F. J., The Gardens, Sunningdale Park, Berks.
 Tracy, H. A., Amyand Park Road, Twickenham.
 White, W. H., Burford Lodge Gardens, Dorking.
 Young, W. H., Clare Lawn Gardens, East Sheen, S.W.

Narcissus Committee.

- Chairman.*—Bennett-Poë, John T., 29, Ashley Place, S.W.
Vice-Chairmen.—Baker, J. G., F.R.S., V.M.H., 3, Cumberland Road, Kew.
 Dod, Rev. C. Wolley, M.A., V.M.H., Edge Hall, Malpas, Cheshire.
 Engleheart, Rev. George H., V.M.H., Appleshaw, Andover.
Hon. Sec.—Scrase-Dickins, C. R., Coolhurst Park, Horsham.
 Barr, R., 12, King Street, Covent Garden, W.C.
 Boscawen, Hon. J., Tregye, Perranwell, Cornwall.
 Bourne, Rev. S. E., Dunston Vicarage, Lincoln.
 Burbidge, F. W., M.A., V.M.H., Trinity College, Dublin.
 Cammell, M., Loxwood House, Billingshurst, Sussex.
 Copeland, W. F. M., Kibblestone Hall, Stone, Staffs.
 Cowan, C. W., Valleyfield, Penicuik, Midlothian.
 Foster, Sir Michael, K.C.B., V.M.H., M.P., Sec. R.S., Shelford, Cambridge.
 De Graaf, S. A., Leyden, Holland.
 Goldring, W., 28, Kew Gardens Road, Kew.
 Kingsmill, A., The Holt, Harrow Weald, Stanmore.
 Krelage, J. H., Haarlem, Holland.
 Leichtlin, Max, Baden-Baden.
 MacMichael, Rev. C., Walpole Rectory, Wisbech.
 Marsh, Rev. T. H., Cawston Rectory, Norfolk.
 Moore, F. W., V.M.H., Royal Botanic Gardens, Glasnevin, Dublin.
 Pearson, Duncan, Lowdham, Notts.
 Pope, J., The Ericas, King's Norton.
 Poupart, W., Marsh Farm, Twickenham.
 Reuthe, G., Wensleydale, Hanworth Road, Feltham, Middlesex.
 Smith, J. A. Dorien, Tresco Abbey, Scilly.
 Sydenham, R., 190, Bristol Road, Birmingham.
 Titheradge, G. T., 10, Cavendish Road, St. John's Wood, N.W.
 Walker, James, Ham Common, Surrey.
 Ware, Walter T., Inglescombe, near Bath.
 Wilks, Rev. W., M.A., Shirley Vicarage, Croydon.
 Willmott, Miss, V.M.H., Warley Place, Great Warley, Essex.

The Thrifty Snowdrop's Story.—Earliest of all the common flowers to bloom is the Snowdrop. It has not yet appeared in blossom in many places outside the gardens and lawns in the south of England or north; but in sheltered Devonshire coombes it has been out a fortnight already. The Snowdrop is really a February flower. Its life story is one of singular interest, though few people have cared to go into that as they have in the case of the more showy Orchids. The Snowdrop, as everyone knows, has a bulbous root; but few know why. The fact is this bulb is a storeroom in which the plant keeps a quantity of reserve sustenance to last it through the winter, and enable it to blossom early in the year before other flowers have ventured to put in an appearance. After the Snowdrop has flowered and seeded, its leaves get very long indeed; this is in order that they may collect a quantity of plant nutriment which, when the leaves begin to decay, slips down into the bulbous root, and keeps the Snowdrop going till next spring. Other plants with bulbous roots store up nourishment in the same manner, and it will be found that they all blossom early in the year. For instance, says the "Daily Express," there is the Lesser Celandine that grows near the hedges in March and early April, and the Crocus. The thing which these plants largely assimilate is starch:

The Rosarian's Year Book for 1901.*

"THE memory of man runneth not to the contrary." Such language, when used in reference to an Act of Parliament, signifies that we have to seek its origin previously to the reign of Richard I.; so in welcoming this the latest edition of "The Rosarian's Year Book" one thinks of the numerous notices of it which are scattered among the long-past volumes of the *Journal of Horticulture*, giving to it an impression of, so to speak, "perenniality." It has become in fact a sort of concomitant of the seasons, which one expects in due course. We do not stop to consider exactly when; but if it did not appear there would at once arise a sense of incompleteness, and an uncomfortable feeling that life was not the same. From the remarks made in his preface by Mr. D'Ombraïn, it is clear that the lovers of Roses and of him feared that some hiatus of this kind might possibly occur in their literary experience this year. It is pleasant, therefore, to see the old familiar names of book and of editor once more, and to know that the Nestor of the Rose world still retains enthusiasm and strength sufficient to utter his cheering annual message in honour of the queen of flowers. At the present moment there is nothing in the aspect of things out of doors suggestive of the glories and fragrance of the gardens of Shiraz; but even by the winter fire the mind can, under the influence of a book like this, be stimulated to the point where it is capable of enjoying some of the pleasures of imagination, though summer be gone.

Prefixed to the volume is an excellent portrait of the Rev. F. R. Burnside, and immediately succeeding it, in his first article, the editor gives us a short biographical notice of that noted prize exhibitor of Tea Roses. Mr. Burnside did much to secure the institution of the Tea challenge trophy, which he captured in the first year. Owing, however, to frequent translation to benefices, with varying qualities of soil, he has not been able to repeat this performance consistently. He is now settled at Great Stambridge, R. chford, in Essex, where Mr. D'Ombraïn expects that he will, in spite of any local disadvantages, again contrive to astonish the world at ensuing exhibitions. In the second article Mr. Walter Easlea, jun., gives a very concise and well reasoned treatise on growing Roses about cities with a smoky atmosphere. This, he says, should be done either by planting them out under glass, or setting them in pots, the object being to give each plant a good Rose soil and also the daily cleansing of the foliage, which is so important. The Rev. J. H. Pemberton, while telling of new Roses in 1900, complains modestly of the editor appealing to one like himself, who during the season staged new Roses unsuccessfully. He thinks that good new Roses are scarce, that there should be a class for new Roses in the decorative section, and regrets that as the numbers of new Hybrid Perpetuals is yearly decreasing, the backbone of the exhibition section is gone. Among new Roses he instances—1, Reine Christina d'Espagne, Tea; 2, Queen of Sweden, Tea; 3, J. B. M. Camm, H.P.; 4, Corallina, Tea; 5, Leonie Lamesch, Polyantha; 6, Lady Clanmorris, H.T.; 7, Lady Mary Corry, Tea; also the three single Hybrid Teas, Irish Beauty, Irish Glory, and Irish Modesty. In his review of "The Rose and the N.R.S. during 1890," the editor notes that it was a disappointing season, the cold weather in May seriously interfering with the exhibitions at Salisbury and the Crystal Palace, while the tropical heat spoilt that at Birmingham. He also remarks upon the absence of any new seedling Rose, and upon the popularity of the garden as compared with the exhibition Roses. However, Rose growers, after the shows were over, got satisfaction in September, when the weather was glorious and particularly favourable to the Teas and Noisettes. After some interesting remarks of Mrs. C. E. Cant upon "Hybrid Tea-scented and China Roses," and some useful directions by Mr. West to young Rose exhibitors, Mr. George Paul gives some really instructive points regarding "The Hardiness of Tea Roses." He thinks we are on the eve of seeing a hardier type of Tea Roses. The hardiness of the Teas has been increased by cultivation on the seedling Brier. Root Tea Roses in England are the dream of journalists, they can only thrive in lands where Nature does nearly all, and man little. Mr. Mawley, the secretary of the National Rose Society, concludes with an article entitled "The Weather of the Past Rose Season."

Mr. Mawley bids us hope that the last three late-flowering seasons will soon be followed by a series of early-flowering ones, restoring the average excellence of the Rose shows to what it was during the six previous summers. In the autumn of 1899 the high temperature favoured the ripening of the wood at the expense of the bloom. Mr. Mawley's last Rose bloom succumbed to the frost on December 14th, 1899, an exceptionally late date. The winter months were cold but not unreasonable. What distinguished those of last spring was the absence of sun in March and the excessive coldness of the soil in April. For the first three weeks of June there was steady warmth, and the Roses grew splendidly until there came a week of cold, during which the growth of both plants and buds was arrested. The succeeding week of July with moderate heat restored the growth, but then followed a torrid spell, in which the flowers withered before they were half expanded. This is the hottest July known at Berkhamsted. Mr. Mawley attributes any failure to the sharp frost at the end of April, the "wild frosts" of middle May, and the last cold week of June.

* Bemrose and Sons, Ltd., Derby, and Old Bailey, London.

National Chrysanthemum Society.

Annual General Meeting.

THE annual general meeting of this important society was held at Carr's Restaurant, Strand, on Monday evening, under the presidency of Mr. Charles E. Shea. Practically the whole of the officials of the society were in attendance, together with the representatives of various affiliated societies and a large body of members. The chief business was the adoption of the report and financial statement; there were also other items to which brief reference is given hereunder. We published the substance of the report on page 103 of our last issue; the financial statement is attached hereto.

The customary formal announcements having been made, the chairman expressed the hope that the meeting would be as orderly and business-like as those that he had had the pleasure of presiding over in previous years. Mr. Shea at the same time alluded to the heavy and irreparable loss the country and the world had sustained in the loss of Queen Victoria, and spoke of the greatness of the reign and the universality of the sorrow.

In moving the adoption of the report and balance-sheet, both of which had been circulated to the members several days prior to the meeting, the chairman spoke direct to the point. He did not think it desirable to criticise the report, but he thought some change in the first sentence should be made, as it did not seem quite consistent with what followed. The chairman said, though the society had had a check, there were other matters that deserved the heartiest congratulations. For example, no one had ever seen finer Chrysanthemums than those shown at the last two shows. He considered it desirable that still more prominence should be given to the decoration classes. Mr. H. J. Jones seconded the adoption of the report and balance-sheet.

Mr. C. E. Wilkins moved, and Mr. J. T. Simpson seconded, "That the thanks of the members are due, and are hereby given, to the auditors, for auditing the accounts." This was carried unanimously, and Mr. Berridge, the retiring auditor, briefly replied. In doing this he referred to the remarkable clearness with which the accounts had been kept by the treasurer, Mr. Wilkins, during the past year, which had made the work of the auditors exceptionally easy. Mr. C. W. Tagg was elected auditor in place of Mr. Berridge, who retires.

It was proposed by Mr. T. Bevan, and seconded by Mr. McKershaw, "That Sir Edwin Saunders be and is hereby re-elected president of the society for the year ensuing, and that the heartiest thanks of the members be given to Sir Edwin for his generous support of the society." This was carried by acclamation.

Mr. T. Bevan moved, and Mr. J. W. Moorman seconded, that Mr. P. Waterer be elected chairman for the current year, both speakers testifying to the admirable work that had been done by that gentleman in the past. Mr. Waterer, however, for reasons that were not stated, absolutely declined to accept the position. It was therefore proposed by Mr. Foster, and seconded by Mr. Witty, that Mr. T. Bevan be elected chairman. The proposition having been supported by Messrs. Gibson and Moorman, was carried. On the proposition of Mr. Simpson, seconded by Mr. Langdon, Mr. Witty was unanimously elected vice-chairman for the ensuing year.

The greatest interest centred in the election of a treasurer, as it had been bruited abroad that Mr. Wilkins would decline nomination. The rumour proved to be correct, for notwithstanding the pressure brought to bear by Messrs. J. W. Moorman and T. Bevan, both of whom were eloquent in their praises of the treasurer's work, Mr. Wilkins positively refused. He had, he said, been insulted, and consequently could not, while retaining his self-respect, stand for re-election. It was subsequently proposed that a vote of thanks be accorded to Mr. Wilkins, but this, with a consistency that is all too uncommon, was most emphatically declined. On the motion of Mr. Newell, seconded by Mr. Jones, Mr. J. W. Moorman was elected treasurer of the society for the year ensuing.

Needless to say Mr. C. Harman Payne was unanimously re-elected hon. foreign corresponding secretary. This was proposed by Mr. Crane and seconded by Mr. Taylor. Mr. J. W. Simmons proposed, and Mr. C. Pulling seconded, that Mr. Richard Dean be re-elected general secretary for the year ensuing. This was carried by an overwhelming majority.

A slight and comparatively unimportant alteration was made in Rule 8 on the motion of Mr. Wilkins, seconded by Mr. Berridge.

It was proposed and seconded that Mr. P. Waterer be thanked for his services to the society, and that an address be engrossed on vellum and presented to him. Mr. Waterer acknowledged the compliment in suitable terms. Messrs. P. Waterer and E. C. Jukes were unanimously elected honorary Fellows of the society.

The scrutineers, Messrs. W. Cutbush, J. W. Wilkinson, and McKershaw, then announced that Messrs. F. Bush, Tottenham; F. Gilks, Ponders End; F. Millson, Tulse Hill; W. Howe, Streatham; D. Phillips, Woodford; G. Langdon, Clapton; J. W. Euston, Great Gearies; R. C. Pulling, Woodford Green; R. Ballantyne, Hackney; J. T. Simpson, Brixton Hill; E. F. Such, Maidenhead; A. Taylor, East Finchley; W. Weeks, Bromley; T. L. Turk, Highgate; W. Logan, Lewisham; W. Owen, Maidenhead; A. Seabrook, Buckhurst Hill; and

J. Berridge, Balham, had been duly elected members of the executive committee for the ensuing year.

Mr. Dean having announced that the annual outing would probably

be to the gardens of Alfred Tate, Esq., Downside, Leatherhead, the proceedings were brought to a close by a vote of thanks to the chairman for presiding.

STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDING DECEMBER 31st, 1900

Dr.	RECEIPTS.	
To Balance brought forward	£76 4 6	
„ Annual subscriptions, 1898	£0 4 4	
„ „ „ 1899	12 9 3	
„ „ „ 1900	238 10 0	
„ „ „ 1901	6 13 6	
	£257 17 1	
„ Donations and special prizes, 1899	£7 12 6	
„ „ „ 1900	79 4 0	
	£86 16 6	
„ Royal Aquarium Company—		
October Show	£75 0 0	
November Show	250 0 0	
December Show	50 0 0	
	£375 0 0	
„ Entry fees, 1900	17 7 0	
„ Rent of space, 1899	£23 7 6	
„ „ 1900	42 3 6	
	£65 11 0	
„ Affiliation fees, 1899	£9 9 0	
„ „ 1900	61 19 6	
„ „ 1901	0 10 6	
	£71 19 0	
„ Medals, &c., affiliated societies, 1899	£16 14 0	
„ „ „ 1900	72 11 7	
	£89 5 7	
„ Medals sold	4 1 3	
„ Sale of catalogues, 1899	2 0 0	
„ „ 1900	1 6 7	
	£3 6 7	
„ Sale of tickets, 1899	£2 19 0	
„ „ 1900	9 2 5	
	£12 1 5	
„ Advertisements in schedule, 1899	£2 11 0	
„ „ 1900	15 17 0	
	£18 8 0	
„ Advertisement in catalogue, 1901	1 1 0	
„ Annual dinner tickets sold, 1900	16 10 0	
„ Balance on annual outing account, 1900	3 3 8	
„ Balance in cash book	£81 14 0	
„ Outstanding cheques	119 11 3	
	£201 5 3	
„ Balance at bank, 31/12/00	£201 5 3	

£1098 12 7

RESERVE FUND.

Dr.	RECEIPTS.	
To Balance on deposit account	£50 0 0	
„ Balance on current account	24 11 2	
„ Cash	0 10 6	
„ Transfer from general account	30 0 0	
„ Interest on deposit receipt	2 6 5	
	£107 8 1	

ASSETS AND LIABILITIES.

LIABILITIES.	
To Spink and Sons—medal	£67 2 10
„ Printing and stationery	2 19 6
„ Expenses Press committee	3 0 7
„ Advertisement Gardening Press	1 15 0
„ Subscriptions, 1901	6 13 6
„ Affiliation fee, 1901	0 10 6
„ Advertisement in catalogue	1 1 0
	£83 2 11
Balance of assets over liabilities	233 13 0
	£316 15 11

EXPENDITURE.		Cr.
By prizes—October Show	£86 15 0	
November Show	347 4 6	
December Show	51 6 6	
	£485 6 0	
In addition to the above prizes the following medals were awarded:—		
8 large gold, 11 gold, 17 silver-gilt, 25 silver, 7 small silver, 13 bronze.		
„ Transfer to deposit account		£30 0 0
„ Printing and stationery, 1899	£6 9 0	
„ „ 1900	56 8 7	
	£62 17 7	
„ Advertisements in Horticultural Press, 1899	£4 2 6	
„ „ 1900	10 7 6	
	£14 10 0	
„ Medals and engravings, 1899	£16 19 0	
„ „ 1900	92 3 3	
	£109 2 3	
„ Hire of rooms, 1899	£3 10 0	
„ „ 1900	4 0 0	
	£7 10 0	
„ Donation to Royal Aquarium employés	2 2 0	
„ Expenses of audit, 1899	0 19 5	
„ Purchase of special prize	5 5 0	
„ Expenses of annual dinner	23 12 7	
„ Expenses of Floral Committee dinner	6 15 9	
„ Entertaining French delegates	1 13 6	
„ Bill posting	9 15 0	
„ Tickets, Royal Aquarium	8 18 0	
„ Cartage	2 2 6	
„ Cost of exhibit at the Paris Exhibition	15 10 9	
„ Expenses of Foreign Corresponding Secretary	1 19 10	
„ Fire Insurance	0 7 6	
„ Secretary's salary	100 0 0	
„ Show expenses—badges	£1 4 3	
Fibre	2 0 0	
Hire of plants	3 0 0	
Hire of vases	6 0 0	
Judges' fees	22 1 0	
Judges' luncheons	18 1 6	
Staff refreshments	1 18 4	
Clerical assistance	2 2 0	
Labour	2 14 6	
Gratuities	3 0 0	
Hotel expenses	2 0 6	
Sundry items	3 10 6	
	£67 12 7	
„ Petty cash—postage and registration	£37 1 11	
Telegrams	1 12 1	
Travelling and Floral Committee expenses	6 0 8	
Carriage	1 8 2	
Sundries	8 3 10	
	£54 6 8	
„ Bank charges	0 13 4	
„ Balance in hand	5 13 4	
„ Balance at bank	81 14 0	
	£1098 12 7	

Examined and found correct { T. J. BERRIDGE } Auditors.
 Countersigned, CHARLES E. WILKINS, Hon. Treasurer.

January 16th, 1901.

By Balance on general account £81 14 0
 „ Balance on deposit account 100 0 0
 „ Balance on reserve current account 7 8 1
 „ Balance on petty cash account 5 13 4
 „ Arrears, members' subscriptions, estimated to produce £12 10 0
 „ Arrears, affiliation fees 3 13 6
 „ Due for dinner tickets 0 10 0
 „ Due for medals 1 19 0
 „ Due for space 35 17 0
 „ Due for advertisements 9 17 0
 „ Due for special prizes 30 5 0
 „ Due for catalogues 0 8 0
 „ Due for medals 0 3 6
 „ Due for tickets 2 11 0
 „ Due for bill posting Royal Aquarium 9 15 0
 „ Tickets (80) at cost price £2 0 0
 „ Medals in hand 5 11 6
 „ Jubilee catalogues in hand 2 0 0
 „ Various properties at Royal Aquarium 5 0 0
 £14 11 6
 £316 15 11

Apple Claygate Pearmain.

At the meeting of the Royal Horticultural Society, held on the 29th ult., Mr. W. Stragnell, gardener to Col. Vivian, Rood Ashton Park, Trowbridge, exhibited a dish of this excellent Apple, to which the Fruit and Vegetable Committee recommended an award of merit. Dr. Hogg, in the "Fruit Manual," describes this variety as follows:—"Fruit, medium size; Pearmain-shaped. Skin, dull yellow mixed with green, and a thin coating of russet and numerous dots on the shaded side, but marked with broken stripes of dark red on the side exposed to the sun. After being kept the ground colour becomes golden yellow, and the streaks bright crimson. Eye, large and open, with long segments set in a deep basin. Stamens, median; tube, short, funnel-shaped. Stalk, an inch long, inserted in a smooth and rather deep cavity. Flesh, yellowish, crisp, juicy, rich, and sugary, partaking of the flavour of the Ribston Pippin. Cells, obovate or elliptical; axile. A valuable and highly esteemed dessert Apple of the first quality; it comes into use in November, and will continue till March. The tree, though not a strong or vigorous grower, is hardy and healthy, attains the middle size, and is an abundant bearer. It succeeds well grafted on the Paradise stock, and grown as an espalier or an open dwarf. Its shoots are slender and drooping. This excellent variety was discovered by John Braddick, Esq., growing in a hedge near his residence at Claygate, a hamlet in the parish of Thames Ditton, in Surrey."

Young Gardeners' Domain

Look at Your Book.

I AM sorry to notice so many young gardeners exhibit their indifference towards mental development and the storing of the mind with the theories upon which practical gardening is based, by the way they refer to R.H.S. certificates and book gardeners. Everyone is entitled to their own opinion, and doubtless that opinion is formed according to individual circumstances. In an enlightened age, such as we are favoured to enjoy, it is inevitable that different people should hold different opinions, and be it desirable or otherwise, such is the case. Majorities and minorities may sway the public mind, yet a majority does not always represent wisdom and prudence, therefore I venture to offer a word in defence of theory and book study as an aid to practical training in order to produce ideal gardeners.

I am not going to state that theory is more important than practical knowledge, or that it should take its place, any more than I should say that a knowledge of chemistry and anatomy are more essential to a medical student's training than his experience gained in the hospital wards. What I do say is that a practical gardener who has never given any attention to scientific study, and the one who has given attention to both, bear the same relation to each other as a "quack" and a doctor qualified by taking his M.D. in the ordinary way. Present-day requirements in horticulture call for men of a higher order than did the requirements and conditions of a generation ago. The aim is the same—viz., best possible fruit, flowers, and vegetables, but the standard of comparison is much nearer perfection. The means at a gardener's command as to manures are more varied, and from their nature a knowledge of chemistry and botany at least are of considerable advantage to a present-day gardener.

Again, what is the point where women gardeners show themselves to advantage? It cannot be in muscular strength nor powers of endurance either of extremes of temperature or bodily strain. It is superior mental ability. Therefore, to be in a position to hold their own against the weaker or opposite sex (call it which you like), the men gardeners have one natural advantage—viz., superior physical abilities, and the means to equal them in mental qualifications are within the reach of all young gardeners who are not content to do merely what they are told as they are told, but are determined to know why they do certain things in special ways to produce certain results, or why certain causes produce certain effects. To combat women gardeners in a fair way like this would be far more effective than exposing them to scorn and ridicule.

I must differ from "Working Gardener" (on page 33), as common sense as well as my own observation favour the conclusion that a well-informed gardener is in a better position to make a favourable impression upon an intending employer's mind than one with the minimum of the three R's to produce a gardener, and it does not take a very philosophic mind to detect between an intelligent person and one devoid of mental culture; and moreover obtaining an appointment as head gardener is one thing, and giving satisfaction and retaining that position is quite another. When a gardener obtains an appointment it is possible that soil and prevailing climatic influences may be different to what he has previously been used to. Nothing under such conditions is calculated to enable him to adapt himself to circumstances so readily and with such certainty as reliable scientific knowledge, science being the result of what practice has substantiated. Mental culture need not make a young gardener "conceited," or "inclined to show off," it may make him self-reliant instead of dependent on local information, which is not always reliable, sometimes none too plentiful, and occasionally coloured with self-interest.—H. C. H.

Poinsettias.

WHERE the demand for flowers during the winter is large these plants should certainly be cultivated in some quantity. Two or three placed in a room impart a very bright appearance, being far more noticeable than half a dozen plants of a quieter colour. When well grown the bracts attain a diameter of 18 or 20 inches, lasting several weeks. Presuming the old stools are good cut down to about 9 inches from the pot and start the beginning of May in a warm house. Take the cuttings when 2½ or 3 inches in length, dipping the heels in sand or powdered charcoal to prevent any bleeding. Insert singly in thumbs, and plunge in a brisk bottom heat. When well rooted pot into small sized 60's, using a compost of two parts loam, one of peat, and one of leaf soil, with a good sprinkling of sand. The plants should then be placed on a shelf near the glass in a warm house, using the syringe twice daily.

The final shift into 48's ere long will be found necessary. For this potting use a compost composed of two parts good turfy loam, one part peat, one part well-decayed cow manure, a little soot, and enough silver sand to keep the whole porous. Press the soil fairly firm, using well-drained pots. The plants may then be placed in their old quarters for a few days, eventually moving them to a frame outside. Then shade slightly for a few days, and syringe and close the frame early. Gradually increase the ventilation, giving full sun, and keep the plants as near the glass as possible, thereby insuring a sturdy growth.

When the plants are thoroughly well rooted into the new compost, afford weak liquid cow manure twice a week. A little Clay's fertiliser will also be found beneficial. With the advance of cold nights, remove the plants to a house having a night temperature of 60° and continue the feeding, keeping the plants close to the glass. After the bracts are fully developed the temperature may be lowered to 55° at night, and on bright days afford a little air to dispel any damp, this being most injurious at this stage. When the bracts have fallen, the plants may be removed to a cooler house, where they should be given little water, and this, after a time, may be withheld altogether. If dwarf plants are required cuttings may be inserted the end of June. Repot when ready into 60's, which will be found large enough. They may then be treated with the larger batch.—H. C. D., Stanmore.



APPLE CLAYGATE PEARMAIN.

Senecio Petasites.—Several plants of this distinct Mexican species are in flower in the temperate house at Kew, where they make a showy effect among the surrounding greenery. The flowers are bright yellow in colour, and borne in large, branching, terminal panicles from last year's shoots. It may either be grown as a pot or border plant, developing to its full size best under the latter treatment. Grown as a pot plant cuttings should be rooted in spring, and the young plants potted in rich loamy soil and stood in a cool greenhouse until the end of May. At this time they may be plunged out of doors and fed liberally throughout the summer. If the points are pinched once or twice when the plants are young a bushy habit is induced. When housed in September for the winter a cool house or frame affords sufficient protection until flowers appear. *S. grandifolius* is also in flower in the Kew collection.—W. D.



Hardy Fruit Garden.

Apricots.—The fan-trained trees on walls should have attention forthwith, inasmuch as Apricots are the first of stone fruits to flower, and it is important that the necessary pruning, cleansing, and regulating of the branches should be completed previously to the period when the blooms expand. Exhausted and weak branches ought to be dispensed with, and their place taken with healthy wood. In the case of young trees, branches of medium strength are better than those which are very vigorous. Dispose the main branches as far as possible to cover equally the space available. Then nail in the secondary ones, and finally secure about 4 inches to 6 inches apart the previous year's shoots, which will constitute the present season's fruiting wood. Where necessary to shorten these shoots, this should be done to a triple bud, so as to insure wood growth.

In pruning the Apricot it is necessary to look out for natural spurs existing on the branches, and to retain these intact, for they will produce flowers and eventually fruit. Where young shoots are not well placed cut them out entirely, but surplus growths pruned to prevent crowding may, instead of being removed entirely, be shortened to within three buds with a view to their forming artificial spurs. Judgment must be exercised not to retain too many of these, but it may be useful to fill up vacant positions profitably by originating them, and supplementing the means of fruit production.

It is important to cleanse the branches and shoots with some effective insecticide if insects attacked the trees last season. A solution of 3 ozs. of softsoap to a gallon of water, adding a wine-glassful of petroleum, and thickening the mixture to the consistency of thin paint with a little soot, clay, and sulphur, is a reliable application. Apply the mixture with a brush—a soft painter's brush—working from the base upwards on young shoots so as to prevent dislocation of the buds. The bare old wood of the stems and branches ought to be well covered, especially at the junctions where red spider finds a lodgment.

Peaches and Nectarines.—These are the next to be dealt with. Remove the superfluous branches whether weak, exhausted, or dead wood, leaving the cuts or wounds carefully smoothed. Immature wood ought also to be cut away, and a general thinning out of undesirable growths effected. As a rule it is best to remove the branches entirely from the wall and redispense them after complete pruning and thorough cleansing. If plenty of young growth is available for training in, this is preferable to forming artificial spurs, but natural spurs may be encouraged. Young growth is usually plentifully produced, but not always equally over the trees, hence in the annual overhauling and fresh disposal of the growth an opportunity is afforded of furnishing the base or lower parts to better advantage. This is a point which should always be considered, and pruning conducted to that end as far as possible consistent with not sacrificing fruitful parts.

Where the young wood is growing rankly, it is desirable first to effect the necessary thinning, selecting the weak, unripe, and ill-placed shoots for removal. The latter are those which cannot conveniently be properly laid in for permanently retaining. The best growths are of medium strength, and which have become well ripened. They are generally freely furnished with bloom buds, but should also have wood buds. Many of them have triple buds, that is a wood bud situated between two fruit buds, and where a shoot is shortened at all it ought to be pruned to a triple bud. When left at full length the leading bud ought to be a wood bud. The difference between wood and fruit buds is most marked. The former are thin and pointed, the latter round and plump, as they contain the rudiments of the parts of the flower. Wood buds remain comparatively dormant for some time yet, while the fruit or blossom buds are already commencing to develop. They are frequently unduly hastened into premature development by the warmth of walls and warm, sunny days. As a rule the later the trees flower the surer the crop, but it almost always depends mainly on the state of weather at the time the bloom expands.

Peaches and Nectarines are subject to red spider in summer, and few trees escape attack, hence it is advisable at this season, before active growth recommences, to dress the trees with a solution which will destroy the pest. Syringe with a softsoap and sulphur solution may be quite effectual in mild attacks, but the safer plan is to brush over the trees with a solution similarly prepared to that recommended for Apricots. When the branches or shoots are attacked with scale insects dislodge them with a pointed stick and brush the infested parts with methylated spirits of wine.

In re-securing the trees to the wall dispose the main and secondary branches so as to admit of the young growths being laid in several inches apart in a regular, systematic manner, and to permit of the leaves when developed having abundant room for their full expansion

and exposure to light. If preferred painting the shoots with an insecticide may be carried out after the training is completed. As a complete finish remove the surface soil from the roots, replacing it with a loamy mixture containing pulverised lime scraps, making it firm.

Fruit Forcing.

Cherry House.—Of all fruit trees the Cherry is most impatient of undue warmth in the early stages of growth, particularly when the ventilation is indifferently provided. This is a vital point as regards crop, therefore commence ventilating at 50°, allowing an increase to 65° from sun heat with proportionate ventilation, closing the house at 50°, 45° being sufficiently high by day from fire heat, and 40° at night. The trees advanced slowly from December are now unfolding their buds, those previously forced being in blossom, and will need attention in fertilising the flowers on fine days. Where the flowers are not expanded it is advisable to fumigate the house, so as to make sure that the trees are free from aphides, repeating at intervals of a day or two. Examine the border to see that there is no deficiency of moisture, affording a thorough supply of water when necessary. Trees in pots will require more frequent attention. Early Rivers, Governor Wood, Black Tartarian, and Elton are excellent varieties.

Cucumbers.—Young plants raised from seeds at the beginning of the year are now ready for transference to the hillocks in the Cucumber house. Press the soil firmly about each plant, place a stick to each, and secure it to the lowest wire of the trellis. If bright sunshine occur, shade lightly in the middle of the day to prevent flagging, and after the plants become established it can be discontinued. Keep the night temperature at 65°, 60° on cold, and 70° on mild nights; 70° to 75° by day, with 80° to 90° from sun heat, closing early in the afternoon, with plenty of atmospheric moisture on fine days, the temperature being from 90° to 100°, so as to secure a good day's work. Plants in bearing will need copious supplies of liquid manure in a tepid state, or a top-dressing of fertiliser may be applied, washing in moderately. Crop lightly, and keep the plants clean. Avoid overwatering. Keep the foliage thin, remove bad leaves and exhausted growths, stopping others one or two joints beyond the fruit as space allows, maintaining a succession of young growths for bearing. Cover the lights of manure-heated frames with double mats at night, the linings of the beds being attended to weekly or fortnightly, according to the weather.

Melons.—A rather brisk bottom heat is advisable in the cultivation of early fruit, and it should be constant. In houses and pits with pathways hot-water pipes are unquestionably the best, but for ordinary pits and frames fermenting materials are reliable and afford good results. In making hotbeds select a dry position, or employ a layer of faggots for the foundation, taking care to make the bed large enough for the season; 4 feet 6 inches at back, and 4 feet in front, with the material well beaten down, will not be too high. Place the frame on the bed, and in four days or so level the bed if necessary by adding the requisite sweetened material, and place on the centre of each light a barrowload of soil in the form of a flattened cone, the top about 1 foot from the glass. When the heat does not exceed 85° to 90° in the hillocks, place a plant in the centre of each, pressing the soil firmly about the ball, taking care not to injure the stem, and a little dry soot drawn in a ring round each plant will protect it from slugs. The day temperature should be 70°, increasing to 80° up to 90° from sun heat, losing no opportunity of admitting a little air to allow of the escape of rank vapour or accumulated moisture, but in no case must air be admitted to lower the temperature below 75°. The night temperature should be 60° to 65°, or 70° in mild weather. Instead of planting out too soon in houses transfer to larger pots as required, securing the stems to small stakes, and rubbing off the laterals to the height of the bottom wire of the trellis.

Peaches and Nectarines.—*Earliest House.*—Any varieties still in flower should have the blossoms brushed over daily with a feather, though shaking the trellis answers in many cases, especially when the house is kept rather dry. When the flowers fade a moderate syringing with water of the same temperature as the house will assist in bringing off the remains of the petals. Undue haste in the forcing must be avoided, for success depends upon steady progress. Disbud cautiously, commencing with the foreright shoots first, following from the upper and upright parts of the tree downwards to the horizontal branches at the base. Shorten any bearing growths left full length in pruning to a growing bud on a level with or above the fruit. Fumigate on the first appearance of aphides, but not whilst the trees are in flower, and be careful not to give too much, as the foliage and fruit are very susceptible of injury. Keep the surfaces near the hot-water pipes moistened as they become dry, and supply water or liquid manure to the border as required. A few sweetened horse droppings, or cow manure after being "caked" and broken up into roughish pieces, may be occasionally sprinkled on the border. Maintain a day temperature of 55° from fire heat, 50° at night, and 60° to 65° by day, with a little ventilation and gleams of sun, ventilating fully above 65°, being careful to avoid cold currents, and close sufficiently early to raise the temperature to 75° from sun heat.

Succession Houses.—Trees started at the new year have the flowers expanded, and will need moderate atmospheric moisture, syringing the trees being discontinued, but damping the paths and borders occasionally to secure a genial condition of the atmosphere. Trees

started with the current month should be syringed until the blossoms commence opening, and where buds are too thick remove those on the under side or at back of the shoots. Before the flowers expand it is good practice to fumigate the house on a calm afternoon, when the trees are dry, to destroy any aphides that may exist, and so keep the trees free from these pests until the fruits are set. Inside horders must not lack moisture, therefore if there is any doubt on this point make an examination, and give a thorough supply of water or liquid manure if the trees are enfeebled by repeated forcing or need succour.

Late Houses.—Where the lights have been removed they need not be replaced until the time for starting the trees or the blossom buds are advanced in swelling and it is not safe to longer expose them. Trees under fixed roofs must have the inside borders kept moist, and the houses be freely ventilated, so as to keep the trees in good condition for giving full crops of fruit. Lifting and re-arranging trees in late houses may still be proceeded with, bringing such operations to a close as soon as possible, yet avoid working about trees and in borders during wet weather, for it only converts the soil into mud, and it bakes and cracks afterwards, forming a close mass, or letting the water into it by the fissures.



All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Plants for Carnation Houses in Summer (H. G.).—The two most reliable crops are Tomatoes and Cucumbers, the former last season being the more remunerative. Procure strong plants without delay and grow them in pots. If Cucumbers are grown they should be accommodated in boxes or troughs, so as to be readily cleared away ready for the Carnations in the autumn.

Planting Tigridias (W. F. T.).—The several species and varieties thrive best in a light sandy loam, and a warm, sunny position, with south aspect, should be accorded. The bulbs should be planted in April about 3 inches deep, it being advisable to place a little sand under and around them. The roots must be lifted in the autumn, when the leaves have died down, and be stored away in some place where frost cannot reach them, and replanting in the following April.

Mignonette in Pots (W. K.).—Fill 5-inch pots with a compost of three parts fibrous loam, and the other part being composed of leaf mould and sand with one-seventh of decayed manure. Make the surface even, and sow seeds of a good strain evenly, cover with fine soil, and water with a fine-rose can. If the pots are placed in the vinery just started the seeds will soon germinate; gradually harden and place them on a shelf close to the glass, where the temperature will not fall below 45°. Be careful that they do not become dry at their roots. Standards and pyramids, where the flowers are not needed, may be removed, and the growths tied down; give these a little artificial manure to the surface of the soil, water carefully, and keep the plants standing on a moisture-holding base.

Rondeletias (P. C. C.).—You may find it rather difficult to grow good specimens, yet with care and proper treatment this can be accomplished. They yield flowers freely, which are very serviceable for cutting, and should be grown much more largely than they are. The plants are slow in a young state, and much headway cannot be made in a solitary season. Cuttings of soft wood root freely in sandy soil under bell-glasses in brisk heat. This plant may be grown into bushes or small standards; for the latter the young plants, after they are rooted, must be supplied with a stake and allowed to extend until the necessary length of stem has been produced, when the point should be removed to induce it to branch. For bushes the young plants may be stopped when they have made a few inches of growth. Pinching is necessary until the plants have formed good bushes, when the shoots may be allowed to extend and ripen thoroughly, when every one will produce a truss of bright scarlet flowers. To grow these plants well they may be grown with Ixoras, and if given bottom heat they extend much more rapidly during the early stages of their growth. *Rondeletias*, of which *R. speciosa* major is the best, are not strong-rooting plants, and do well if potted the same as Ixoras, and in similar compost. We have been successful with them when one-third of sandy loam has been incorporated with the peat. These plants are much subject to thrips, and need careful watering. When bushes or standards have been formed they can be kept shapely by a judicious system of cutting back the shoots after flowering.

Largest Camellia Tree in the British Islands (E. B. G.).—The tree, 16 feet high, and covering an area 22 feet square, or about 55 square yards, and over 13 inches through at the butt, is certainly a very fine specimen, though there are others probably quite as large, but of these we have no specific particulars. Our correspondent states that "the flower is a double red, and if the present mild weather continues it should be in full bloom by the middle of next month (February, the letter being dated January 28th). If any of your readers are over on the island and should care to see it, I shall only be pleased to show it them. It is a glorious sight, as there are rarely less than 2000 flowers on it." The address is Mr. Edward B. Gawne, Kentraugh, Colly, Isle of Man.

Brown Spots on the Under Side of Chrysanthemum Leaves (F. H. D.).—The brown spots are those occasioned by the rust fungus, *Puccinia hieraci*, in the uredo, or summer spore condition, which some observers consider as belonging to *Puccinia tanacetii*. The plants should be sprayed at intervals of a few days, dating from the growth of new leaves, with potassium sulphide solution, 1 oz. to 3 gallons of water, or when the leaves are tender half an ounce to a gallon of water, which not only destroys the rust spores, but also those of various other fungus pests that attack Chrysanthemums. Other preventive and remedial measures have been from time to time propounded in the *Journal of Horticulture*, of which Veltha emulsion, occasionally advertised in our columns, has received recent and favourable notice.

Paint for Inside of Greenhouses and Vineries (Bankside).—The most serviceable treatment for woodwork of greenhouses and vineries is that of giving them three coats of Stockholm tar thinned with paraffin oil to the consistency of ordinary paint, about four quarts of Stockholm tar and one quart of paraffin oil being proper proportions, the wood being perfectly dry when applied, that is, the first coat, and this thoroughly dried before applying the second, and so on with the third. This priming renders the wood unassailable by wood fungi and insects, and readily takes any kind of ordinary paint, for which we prefer stone colour as less liable to discoloration than white lead paint, though we have known this exclusively used for the painting of plant and fruit houses without any injurious effects for over half a century. The Stockholm tar and paraffin oil mixture gives a light brown colour to the wood, and need not be otherwise painted unless the colour is objectionable.

Coarse Salt as a Manure for Roses on Sandy Soil (Amateur Rose Grower).—We presume you mean agricultural salt, which is rock salt ground, and does not usually contain more than half per cent. of moisture and the 3 to 6 per cent. of impurities which give it the reddish colour. It is not objectionable for horticultural purposes, as shown by the following analysis by Mr. G. H. Sharpe, F.C.S.:—Chloride of sodium, 96.86; chloride of calcium, 0.49; sulphate of lime, 0.74; insoluble matter, 1.58; water, 0.33—100. Its use certainly tends to the conservation, if not evolution, of moisture, and renders substances otherwise unavailable at the disposal of the plant in the soil, whilst strengthening the plant growth; it also acts beneficially on fungoid and insect pests. A dressing of 5 cwt. per acre, 3½ lbs. per rod, would be sufficient for Roses, applying as soon as the ground is thoroughly thawed, or not later than the middle of March. We should prefer a dressing composed of equal parts bonemeal and best quality kainit, applying 3½ lbs. of the mixture per square rod (30¼ square yards), and if a dressing of rapemeal at a similar rate were also applied it would be an advantage, pointing all in lightly. Cow manure as a mulch would be better than horse droppings, as being cooler and more moisture-holding.

Tuberose (M. G. R.).—The plants have either been too dry or checked in the later stages of growth. They need liberal supplies of water after they are once started and are rooted abundantly in the pots in which they are to flower. You do not give the temperature of the house in which they had been grown previous to taking them to the stove. If cool, the sudden change would prove detrimental and too forcing; this combined with too little water would bring about the condition you have described. You cannot do better than keep the bulbs in any cool place where they are safe from frost and dry, but not dry enough to shrivel. They should be potted from the middle to the end of May, but before potting dishud them—that is, remove all side eyes that only spring up after, and rob the spike. Pot them in a mixture of good loam three parts, the remaining part leaf mould, sand, and one-seventh of decayed manure. Start them in a vinery or any house kept moderately close until they commence growing and rooting. In this stage they need very careful watering. It is a good plan to place the pots together and cover the surface with cocoa-nut fibre refuse, leaving out the crown. If the syringe is used occasionally to keep the surface damp they will need no water until they begin growing, provided the soil was in an intermediate state for moisture when potted. When the plants are growing and rooting freely they should be removed from the vinery, if started in that structure. If gradually hardened the best place for them is a cold frame or greenhouse. If the lights can be thrown off during hot bright days all the better. Some care is needed at first not to check the plants until they will bear cool airy treatment. We have grown them well by plunging the pots in ashes outside from the beginning of July to the end of August, when they were throwing up their flower spikes. They should then be removed to a cool airy house. The temperature can be gradually increased to bring them into flower whenever required.

Cyclamen Flowers Indifferent (*Mancunian*).—The flowers are large, have plenty of substance, but crumpled, and lack some essential condition for perfect development. We should suggest defective root action or nutriment as the cause. A light top-dressing of some approved fertiliser—say a pinch of dissolved bone (superphosphate) to each pot, about a thimbleful sufficing, watering in, might act beneficially. The temperature should range between 50° and 55°, with a genial atmosphere, secured by damping available surfaces occasionally.

Pandanus Veitchi (*Amateur*).—Repot small plants in a mixture of loam, sand, and one-seventh of manure. These are useful in various sizes up to 10-inch size. When plants are well developed, all the suckers are removed for stock, and the specimens are employed for decoration until they are of no further use. When once a stock is obtained there is no difficulty in growing on young plants as rapidly as others are destroyed. For rooms, or even the dinner table, these plants look well rising from a base of Selaginellas and small Ferns. When giving the final potting a few may be placed on the surface. By the time the plants are ready for use the base will be well furnished.

Choice Pentstemons (*E. R. J.*).—In order to be certain of perpetuating good named varieties you ought to have rooted last autumn, wintered them in cold frames, and prepared for bedding out in April or May. Seedlings, however, are quite as beautiful as named varieties, a single packet of seeds giving a large number of plants. Sow the seeds at once on the surface of well prepared pans of soil. It is a good plan to moisten the latter prior to sowing the seeds, covering lightly with fine soil. Place in a frame over a hotbed or in a fairly brisk heat, cover with squares of glass, and shade heavily till the seedlings appear. The latter being early, pricked out in pans or boxes of good fine soil, and kept for a time in gentle heat, will soon be large enough for hardening off, and if planted out in beds or borders of well prepared soil by the middle of May, a fine display will be made this season.

Peach Shoots Browned (*Mc.M.*).—The brown and dead bark on a portion of the shoots is due to what is known as gummosis, though there is no evidence of an exudation. In your case the evil is situated in the outer wood and cambial layer, where exist the mycelial hyphæ of a fungus, apparently that of the exceedingly common *Cladosporium epiphyllum*, which is a wood parasite, and the cause of gummosis in some kinds of stone fruits. The fungus appears to gain access by a wound, though it is difficult to account for such entrance in the case of young shoots in which the fungal hyphæ ascends and kills the wood, girdling it between the bark and wood, and then the bark dies. The diseased parts should be cut away to sound wood below them, and the trees dressed with quicklime on the surface of the pots. Probably placing the trees outdoors may have tended to accelerate the progress of the parasite, if not actually induced an attack, the prolonged damp weather being favourable to it. There is no trace of frost-bite, as the attack is in maturer parts of the shoots, hence pointing to the parasite being latent in the older wood, though this is not clear.

Potting Alocasias (*W. Raby*).—The plants should be potted now, and to insure their success the whole of the old compost should be removed from the roots annually, for the very best material in one season becomes too much decomposed. Where the root portion of the stem of these plants is too long to allow of them being lowered in the pots in which they are to be placed, a good portion may be removed without injury to the plants. As growth extends they root freely from the collar and upper portion of the stem, and if placed sufficiently low in the pots at the commencement they can be top-dressed with rich material during the growing season. Alocasias do well in a compost of fibrous peat and sphagnum moss in nearly equal proportions, with large lumps of charcoal freely intermixed. The former must predominate, and a good layer of the moss should be placed over the surface after potting has been completed. The pots or pans should be about one-third filled with drainage, and the centre of the plants well elevated above the rim. The material advised for potting should be pressed as firmly as possible into pots as the work proceeds—that is, if the crowns are separated. In many instances this need not be done, as the old material can be washed from amongst the roots without separating the crowns. If possible plunge them in bottom heat to give them a start, and keep them in a close moist atmosphere. The root portions of the stem, if young plants are needed, may be cut up into lengths and laid amongst sandy soil in pans, and placed into the propagating box until they break into growth, when they can be potted singly, or a number placed together in each pot.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to

separate them when the paper is damp. (*H. E. T.*).—1, Polypodium pectinatum; 2, Todea hymenophylloides; 3, Adiantum Farleyense; 4, Asplenium viviparum. (*C. B.*).—1, Cypripedium Harrissianum; 2, C. villosum. (*A. R.*).—1, Begonia ferrea; 2, B. lucida; 3, B. Gloire de Sceaux; 4, B. metallica. (*S. F.*).—1, Masdevallia Lindenii; 2, M. tovarensis; 3, Platycerium alcicorne; 4, Nephrolepis davallioides; 5, N. tuberosa; 6, Adiantum trapeziforme. (*F. L. H.*).—Hoffmannia Ghiesbreghtii, Mexico. (*T. E. Lander*).—Cœlogyne cristata (the type). The yellow mark is absent in the white variety.

Covent Garden Market.—February 6th.

Trade moving.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, cooking, bush. ...	2	6 to 7	0	Lemons, case	9 0 to 16 0
„ Californian, case	7	6	9 6	Oranges, case	6 0 15 0
Apricots, Cape, box ...	8	0	10 0	Pears, crate	3 0 7 0
Chestnuts, bag, from ...	5	0	15 0	„ stewing, case of	
Cobnuts, doz. lb., best ...	4	0	5 0	„ 72 to 120	4 6 6 6
Grapes, black	0	6	2 6	„ Californian, case	15 0 18 0
„ Dutch, lb.	0	6	1 0	„ ½ case	9 0 10 0
„ white, per lb. ...	1	6	5 0	Pines, St. Michael's, each	1 6 4 6

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.	
Artichokes, green, doz. ...	2	6 to 3	6	Greens, bush.	0 6 to 1 0	
„ Jerusalem, sieve	1	6	0 0	Herbs, bunch	0 2	0 0
Asparagus (Spruce Grass)	0	6	0 8	Leeks, bunch	0 1 1	0 0
„ English, 100 ...	7	0	0 0	Lettuce, doz. French ...	0 8	1 0
„ Giant, bundle ...	15	0	20 0	Mushrooms, forced, lb. ...	0 8	0 9
„ Spanish, bundle ...	1	6	1 9	Mustard and Cress, pmnt.	0 2	0 0
„ Paris Green ...	5	0	6 0	Onions, Dutch, bag ...	3 6	0 0
Batavia, doz.	1	3	1 6	„ English, cwt. ...	5 0	0 0
Beans, French, per lb. ...	0	10	0 0	Parsley, doz. bnchs. ...	2 0	3 0
„ Jersey, per lb. ...	1	6	2 0	Potatoes, cwt.	3 0	7 0
Beet, red, doz.	0	6	0 0	Radishes, doz.	1 0	1 3
Broccoli, bush.	0	6	1 0	Rhubarb, doz.	1 2	1 5
Brussels Sprouts, sieve...	1	0	2 0	Savoy, tally	4 0	5 0
Cabbages, tally	3	0	5 0	Scotch Kale, per bushel...	0 6	1 3
Carrots, doz. bnch. ...	2	0	3 0	Seakale, best, doz. ...	12 0	0 0
Cauliflowers, doz. ...	1	6	3 0	„ 2nd, doz.	6 0	8 0
Celery, bundle	1	0	1 9	Shallots, lb.	0 2	0 3
Chicory, Belgian, lb. ...	0	4	0 0	Spinach, bush.	2 6	3 6
Corn Salad, strike ...	1	0	1 3	Turnips, doz.	2 0	3 0
Cucumbers, doz.	12	0	18 0	Turnip tops	0 9	1 0
Endive, doz.	1	6	0 0	Watercress, doz.	0 8	0 10

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Asparagus, Fern, bunch	1 6	to 2 6	Lilac, white, bunch, ...	3 0	to 5 0
Carnations, 12 blooms ...	2 6	3 0	Lily of the Valley, 12 bun.	8 0	15 0
Cattleyas, doz.	10 0	18 0	Maidenhair Fern, dozen		
Chrysanthemums, dozen			bunches	4 0	8 0
blooms	1 0	3 0	Marguerites, doz. bnchs.	2 0	4 0
Daffodils, doz.	12 0	15 0	„ Yellow, doz. bnchs.	2 0	4 0
Eucharis, doz.	4 0	6 0	Mimosas, bnch.	1 0	1 6
Gardenias, doz.	3 0	5 0	Odontoglossums	6 0	8 0
Geranium, scarlet, doz.			Poinsettias, doz. blooms.	8 0	12 0
bunches	8 0	12 0	Roses (indoor), doz. ...	2 0	4 0
Hyacinths, doz.	4 0	8 0	„ Safrano, doz.	1 6	2 0
Lilium lancifolium album	3 0	5 0	„ Tea, white, doz. ...	1 0	3 0
„ „ rubrum	3 0	5 0	„ Yellow, doz. (Perles)	2 0	4 0
„ various	4 0	8 0	Smilax, bunch	3 0	5 0

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acers, doz.	12 0	to 24 0	Foliage plants, var., each	1 0	to 5 0
Arbor Vitæ, var., doz. ...	6 0	36 0	Geraniums, scarlet, doz.	6 0	10 0
Aspidistra, doz.	18 0	36 0	„ pink, doz. ...	8 0	10 0
Aspidistra, specimen ...	15 0	20 0	Hydrangeas, white, each	2 6	5 0
Azaleas, various, each ...	2 6	5 0	„ pink, doz. ...	12 0	15 6
Boronnias, doz.	20 0	24 0	„ paniculata, cach	1 0	3 0
Cannas, doz.	18 0	0 0	Lilium Harrisii, doz. ...	8 0	18 0
Crotons, doz.	18 0	30 0	Lycopodiums, doz. ...	3 0	6 0
Dracæna, var., doz. ...	12 0	30 0	Marguerite Daisy, doz. ...	8 0	10 0
Dracæna, viridis, doz. ...	9 0	18 0	Mignonette, doz. ...	8 0	12 0
Erica, various, doz. ...	8 0	18 0	Myrtles, doz.	6 0	9 0
Euonymus, var., doz. ...	6 0	18 0	Palms, in var., each ...	1 0	15 0
Evergreens, var., doz. ...	4 0	18 0	„ specimens	21 0	63 0
Ferns, var., doz.	4 0	18 0	Roses, doz.	6 0	18 0
„ small, 100	4 0	8 0	Stocks, doz.	8 0	12 0
Ficus elastica, each ...	1 6	7 6			

Trade Catalogues Received.

Z. Coleman, High Street, Sandwich, Kent.—*Seeds.*

J. Jefferies & Son, Cirencester.—*Seeds.*

H. J. Jones, Ryecroft Nursery, Lewisham.—*Portfolio New Chrysanthemums, New and Choice Plants and Seeds, Chrysanthemum Guide.*

Vilmorin, Andrieux & Co., 4, Quai de la Mégisserie, Paris.—*Seeds.*

T. S. Ware, Hale Farm Nurseries, Feltham.—*Seeds.*



Agricultural Education in Canada.

WE are constantly being told that in England the people are so enlightened that they are left to carry out much valuable work quite independently of State aid. Are we making this quite clear to the reader? We infer that here private enterprise does the work that in other countries would emanate from the Government. Well, that is very good, and in countless instances the result may be termed very good.

But there is a limit to private enterprise, and we question sometimes whether it would not be wiser if the State took action a little and a little sooner. We do not want to curtail the liberty or liberality of the subject, but we think sometimes it might with great wisdom be supplemented. There is much red tape yet abroad, and our modes of moving are cumbersome and clumsy. We cannot shake ourselves free of precedent. That is one result of (shall we say) our old age as a nation. The young countries simply walk round and over us, and put plans into motion, get them into good working order, while we are still considering whether any change is necessary at all. Perhaps it will be said that any comparison between ourselves and the Dominion of Canada is not fair to ourselves. Our arts and handicraft are so manifold that we must not single out one particular branch and say that the teaching of that branch needs special attention.

There we think the mistake is made, before our trade grew, and even now there is an immense amount of pure agriculture, and we make small provision for its encouragement. By that we do not mean the imposition of bounties; we mean we do not provide adequate elementary instruction for those whose lives will be passed in country villages either as workers or holders of agricultural lands. Canada is essentially agricultural, and the Government is fully alive to the necessity of fostering by every means in its power the agricultural interest. We ought not to be too proud to take useful hints wherever found; indeed, we should be glad to think that this great English speaking nation across the water is so up to date.

It is an old habit of school days which still lingers with us, in reading or hearing of a land not very familiar, it is just as well to take down the atlas and impress the situation on the mind. Look at the great expanse of Canada, consider its divisions—Ontario, Manitoba, North West Territories, New Brunswick, Nova Scotia, British Columbia, and Quebec. The first item is of course expenditure, and the figures are rather startling. The Dominion and Provincial Governments in 1899 expended about £156,250 on account of agriculture. In what way was this money laid out? In experimental farms, by dairying instruction, by assistance to agricultural societies in the North West, by cold storage in the transport of butter and fruit by rail and steamer from the interior to the sea-board and across the ocean.

At the experimental farms the work consists largely in submitting actual observations in the field to scientific tests, and in the application of the best results of scientific knowledge to matters of everyday importance on every farm throughout Canada. Much literature is distributed from the central farm, and experts travel and lecture throughout the Dominion.

The Ontario Agricultural College takes young men of sixteen who are intended to own and manage farms, and gives them a two-years course. By staying four years they can qualify for the degree of B.S.A. There is a special dairy school attached to the college open to both sexes. To prove that the college supplies a need we only add that it is full, and there are forty students who have to remain outside. Now we come to the best feature (as we think). The Public School Act has been lately amended, and the rural elementary give special instruction in agriculture, and this teaching is made compulsory in Standards IV. and V. in the country. In the towns it was placed as an option with botany. There are at Toronto and Ottawa two normal schools for training teachers, and special instruction is given in agriculture, the expense being met by Government grants.

In Manitoba agricultural instruction is given in all the public schools, and text books and boxes of chemicals for illustrating the lessons are supplied; the work is making great progress.

In the North West territories agricultural instruction is compulsory in all public schools from Standards I. to V. The nature of the soil is studied, plants are grown under all conditions, and the lessons learned in school are enforced by observations outside the school and home. Animal life is studied both from literature and from life, and the children learn to have an intelligent knowledge of their most familiar

surroundings. In the elementary classes the teaching takes the simplest possible form, and the children are not confused by terms and illustrations far above their heads. "Nature lessons" is the term applied to this teaching of agricultural rudiments in New Brunswick and Nova Scotia, and the term is a happy one we think.

To encourage a special study of agriculture at the normal school at Truro (Nova Scotia), teachers who are successful in obtaining an agricultural diploma receive in a school where agriculture is taught 100 dollars more than a licensed teacher without such a diploma. Five prizes of 50 dollars each are offered annually by Government; tuition is also free, and there is an opportunity for earning money by working on the provincial farm attached to the school.

In the province of Quebec there are four agricultural schools, and there is a large dairy school at St. Hyacinthe, where are trained inspectors for cheese and butter syndicates. This school is under the control of the Dairymen's Association, which was founded in 1882. Of course in Quebec (the province) fruit growing is a great feature, and there are two pomological and horticultural societies, and the Government has established four fruit experimental stations. By means of these, the farmer will obtain a thorough knowledge of the fruits best adapted to the region in which he lives.

There are sixty-five agricultural societies in operation, and in 1896 there were 509 farmers' clubs, and these clubs organise competitions respecting farm crops, purchase thoroughbred animals, attend lectures, and take part in discussions. Fruit, and milk products, such as cheese and butter, seem in this province to claim the larger share, and we certainly know by experience that Canadian cheese is among the very best. What surprises us is the thoroughness throughout the Dominion with which this agricultural teaching is carried out. We have gathered our information from extracts supplied by Dr. William Saunders, director of the Central Experimental Farm at Ottawa.

It is modestly allowed that the first teachers and teaching of agricultural subjects or "Nature lessons" was not up to the mark. That we can quite understand; it always takes time to get a new scheme into workable order, and when the teachers have fairly grasped what is needed of them the rest will be comparatively easy, especially as there is a growing appreciation by the parents of the work that is being done for their children. Would that we could see "Nature lessons" given in all our elementary schools throughout the United Kingdom!

Work on the Home Farm.

We cannot give a very satisfactory account of the progress made during the past week. It has been a period of storm and blizzard, and work has been almost at a standstill. What it may have been at sea we can only guess, but we never knew rougher or more searchingly cold weather on land.

The men who are hedging at piecework, having lost much time lately, braved the elements on a recent morning, but were driven home again about 9 A.M. That the Wheat plant has suffered is very probable, whilst there is also reason to fear damage to the young Clover, as its roots were in a partly waterlogged state during these frosty winds. The same remark applies to the Turnips, and we fancy that a good proportion of the very large white-fleshed ones will rot before they can be eaten. This will tend to do away with the glut now prevailing, roots being given away freely to those who will find sheep to consume them on the land.

Manure leading is the only possible work, for there is too much snow for satisfactory ploughing. We have noticed carts travelling by with very small loads, which looks more like exercising horses than getting work out of the way. Perhaps the men who are filling the carts in a large covered yard are too willing to make such a desirably sheltered job spin out.

There would have been more threshing if the weather would have allowed. One farmer expresses satisfaction at the delay, as it enforces increased economy of straw. Certainly, stackyards are exhibiting a very thin appearance for the beginning of February. Haystacks, too, are rapidly dwindling, for the ewes have demanded a supply of dry fodder during the last few days, which under milder conditions they would not have needed, and this extra drain upon the supply of hay and chaff has come at a very untoward time. The careful flockmaster, however, will not refuse the animals the dry food which is really a necessity, much as he may grudge it. There are not many lambs about yet, and a good thing too. We have heard of one or two foals—one born in December, a few days too soon to suit the owner's views, who is an exhibitor of Shires.

Driving past a neighbour's field yesterday we noticed that he had got quite a considerable breadth ridged up for a Potato crop. The work is perforce stopped, but the ridges, being left very rough and open to the weather, must be deriving much benefit from it, and will make a fine tilth for the tubers to root into when planted. Prices have been a little easier, but the frost will have a hardening effect once more. As seconds will probably make a good price, this should be a favourable opportunity to get a change of seed. Scottish seed is expensive, more so this year than usual, but is a good change for any soil, as also is warp-grown seed. Limestone seed does very well on sand, and black soils on limestone.

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trees, 1/10 gross; Wall Nails, same price as ordinary nails; Glazing Staples, 1/6 gross; Plant Pots, also Pans, 3/- east any size (card. ford.); Pot Suspenders; Pot Crocks; Orchid Baskets; Garden Syringe; Spray Diffuser, for spraying insecticide, &c., complete, 2/6; Powder Diffuser, for diffusing powder on plants, filled, 1/-; Flower Grip Holders of all kinds; Greenhouse Shading, 9d. tins—if not satisfactory after trial money will be returned; Mushroom Spawn, very prolific, 4/- per bu-hel; Insecticide, 1/3 dozen boxes; Mealy Bug Destroyer, 7d. bottles; Horticultural Soap, 1½lb tins, 1/-; Powder Weed Killer, if not the best and cheapest after trial money will be returned, 1/6 tin, makes 16 to 50 gallons; Slug Killer Powder, certain destruction to slugs, &c., and a splendid fertiliser, from lb. tins, 9d.; Lawn Sand, kills all weeds and nourishes the Grass, from lb. tins, 9d.; Tobacco Powder, extra fine ground, from 9d. tins; Seed Germinator, 6d. boxes, no seed should be sown without a dressing of this; Fertiliser, perfect plant food, from lb. tins 9d.; Manures, &c., &c. All carriage and package free. **SAMPLES GRATIS.**

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Journal of Horticulture.

THURSDAY, FEBRUARY 14, 1901.

The Weather of 1900.



WHATEVER the young century which has just arrived may have in store for us during its opening years, it certainly will not be able to reproach its predecessor with having set it a bad example so far as the climatic conditions, which have upon the whole accompanied its closing years, are concerned. Not so very many years ago wet and inclement summers were of far more common occurrence than those in which sunshine and heat predominated. Of late, however, summer after summer has come and gone, each in its turn bringing a large proportion of warmth and a small proportion of rainfall, and in these respects the past season may be said to have followed in the footsteps of its immediate forerunners, at any rate over a considerable portion of our islands.

For all this, although in many ways favourable, it has been a much more average year in all districts in its weather than either 1899 or 1898. It seemed, indeed, as late as the commencement of July, that the season was to be one of excessive rainfall and deficient temperature, for up till then, after a very mild January, April had been the only month with its usual share of heat, and even that month could in no way be described as a pleasant or favourable one. July, however, brought a most decided and welcome change, and onward to the close of the year, with the exception of two periods of wet and stormy weather, conditions remained upon the whole most remarkably mild and genial.

Unfortunately the first of these periods occurred at so critical a time in regard to agriculture as the first week in August. On the 6th of that month, which unfortunately was Bank Holiday, an exceptionally severe cyclonic storm for the time of year passed directly across our islands. In its passage it caused much damage in many directions, the fruit crop suffering especially, besides entirely upsetting all holiday arrangements. The second period prevailed during the closing days of

During **FIFTY-TWO YEARS** the "**JOURNAL OF HORTICULTURE**" has been written by Gardeners for Gardeners, and in its principles, its practice, and its price it still remains the same. One alteration is perhaps, however, necessary. Our modern methods of production have rendered the price old-fashioned, and hence in order to meet the wishes of the present generation of Gardeners the "**JOURNAL OF HORTICULTURE**" will hereafter be sold for **TWOPENCE** instead of Threepence.

the year and century, several intense depressions advancing to our islands from the Atlantic, and bringing some very severe gales and heavy rainfalls.

Although in a short article of this description it is impossible to give an exhaustive account of the rainfall of the year, its general distribution over our islands will be seen from the following table, which gives the monthly and yearly falls, and the differences from the average at eight selected stations.

1900.	Aberd'n	Leith	Liverp'l	Valencia	Bristol	Jersey	Oxford	L'nd'n
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ...	3.45	2.35	4.50	5.27	4.54	4.88	2.30	2.42
February ...	3.82	2.42	1.33	4.39	6.40	2.41	1.76	1.64
March ...	2.29	1.12	1.10	1.93	1.28	1.87	0.50	0.32
April ...	1.66	1.09	1.20	3.17	1.23	1.22	0.39	0.72
May ...	1.00	0.00	1.78	4.51	2.53	1.39	1.33	0.39
June ...	1.83	2.31	2.69	5.55	2.48	1.77	2.73	2.65
July ...	3.96	2.62	1.52	2.12	0.88	1.34	0.88	1.22
August ...	2.81	3.89	5.48	5.62	2.34	1.98	3.13	3.25
September ...	2.45	1.44	0.59	2.52	0.80	1.29	0.41	0.63
October ...	3.23	4.11	4.21	7.65	3.99	2.38	2.32	1.55
November ...	4.44	4.94	3.04	8.29	2.90	6.50	1.65	1.95
December ...	2.88	3.54	2.59	9.35	5.97	5.00	3.27	2.24
Total falls	33.82	31.23	30.38	60.87	35.34	32.03	21.17	19.93
Averages	30.84	23.35	28.93	55.80	34.88	34.18	25.72	24.84
Departures f'm av'age	+2.98	+7.88	+1.45	+5.07	+0.46	-2.15	-4.55	-4.86

The rainfall upon the whole, therefore, was excessive in the north and west, but deficient over midland, south-eastern, and southern counties. At London the deficiency exceeds that of 1899 by 2 inches. It will be noticed that March, April, July, and September were the driest months, the wettest being the three winter months with August, October, and November. The most noteworthy feature of the year's rainfall was a remarkable downpour extending right across the central districts of England on December 30th, at some stations the fall for this date exceeding 3 inches.

Mean atmospheric pressure during the year was generally slightly deficient. The monthly means, and those for the year, at the stations for which the rainfall values have been given, are as follows:—

1900.	Aberd'n	Leith	Liverp'l	Valencia	Bristol	Jersey	Oxford	L'nd'n
	ins.	ins.	ins.	ins.	ins.	ins.	ins.	ins.
January ...	29.740	29.764	29.866	29.930	29.929	29.989	29.930	29.931
February...	29.535	29.522	29.540	29.529	29.564	29.597	29.572	29.572
March ...	30.068	30.061	30.051	30.034	30.022	29.997	30.024	30.005
April ...	29.819	29.838	29.949	29.999	30.013	30.071	30.003	30.004
May ...	29.911	29.908	29.952	29.910	29.974	29.992	29.981	29.986
June ...	29.901	29.925	29.913	29.876	29.945	30.008	29.913	29.953
July ...	29.908	29.921	29.931	30.007	30.018	30.062	30.012	30.020
August ...	29.945	29.935	29.946	29.964	29.974	30.003	29.976	29.981
September	29.974	30.007	30.095	30.115	30.160	30.176	30.145	30.148
October ...	29.776	29.805	29.904	29.933	29.938	30.063	29.981	29.988
November	29.692	29.635	29.710	29.721	29.729	29.778	29.739	29.748
December	29.591	29.634	29.785	29.773	29.912	30.029	29.909	29.938
Mean ...	29.822	29.834	29.891	29.903	29.935	29.980	29.935	29.940
Av. mean	29.836	29.856	29.914	29.919	—	29.977	29.955	29.957
Departures f'm av'age	-0.014	-0.022	-0.023	-0.016	—	+0.003	-0.020	-0.017

These figures show a great and general deficiency of pressure in February and November, and a considerable excess for March and September, the means for the remaining months not differing materially from normal. The greatest pressure at 8 A.M. reported over our islands during the year was 30.88 inches in the south-west of Ireland on March 14th, and the least 28.31 inches at Sumburgh Head on December 31st, a range of $2\frac{1}{2}$ inches.

For the fourth year in succession the mean temperature has been much in excess of the average, although as a whole the year has not been as warm as its predecessor. In the third table given, the means for each year, and also for the year at eight stations situated over our islands, will be seen.

1900.	Aberd'n	Leith	Liverp'l	Valencia	Bristol	Jersey	Oxford	L'nd'n
	degs.	degs.	degs.	degs.	degs.	degs.	degs.	degs.
January ...	33.7	40.4	40.5	44.9	41.2	45.4	40.1	40.3
February ...	33.1	34.6	36.4	39.9	38.2	43.5	37.3	38.7
March ...	37.8	39.0	38.9	41.8	39.4	43.0	39.1	39.8
April ...	45.2	47.2	47.1	49.5	48.0	49.7	47.7	48.3
May ...	48.3	50.9	50.4	51.9	51.4	53.9	51.4	53.1
June ...	52.9	55.9	53.2	56.7	58.6	59.2	59.1	60.6
July ...	58.3	61.5	62.3	60.5	65.2	66.0	65.9	67.7
August ...	55.5	57.0	59.0	59.1	61.0	63.4	61.1	62.3
September	53.5	55.6	56.9	57.3	57.9	61.2	57.7	59.3
October ...	43.0	47.7	50.1	51.5	51.8	55.9	50.5	51.1
November	43.3	43.3	45.4	46.8	46.0	50.5	45.7	46.6
December	42.4	44.5	46.1	47.9	45.5	49.2	45.0	45.4
Mean ...	46.3	48.1	49.3	50.7	50.3	53.4	50.0	51.1
Av. mean	46.2	47.7	48.8	51.0	49.2	51.9	48.8	49.9
Departures from means	+0.1	+0.4	+0.5	-0.3	+1.1	+1.5	+1.2	+1.2

These means are those of the daily maximum and minimum readings, and are not corrected for diurnal range. In the excessive warmth of January, July, and the autumn months, and in the deficient temperature of May, these figures bear a marked resemblance to those of 1899. In that year, however, February was very warm and December very cold, these conditions being reversed in the present case. The means for March, June, and August also are much below those of these months in 1899.

During the great heat which prevailed in July, maxima reaching and exceeding 90° were recorded on several days over the central and south-eastern counties of England. The greatest temperature reported was 95° at Cambridge on the 20th, this being the highest maxima that has occurred over our islands since 1881, when a reading of 97° was registered at Greenwich on July 15th. Throughout the wonderful summer of 1899 a temperature of 90° was only once reached at London on August 25th. The least temperature reported over our islands was 8° at Wick and Nairn on February 8th; the extreme, therefore, was 88°.

Snowstorms were not much in evidence during the year; but some heavy falls occurred in the first fortnight of February, and frequent showers prevailed throughout the latter part of March. With the exception of November, electrical disturbances were reported from various parts of our islands during each month of the year; they were most prevalent during June and August. Aurora was observed at many northern stations on January 19th, at Wick on April 24th, and in the north-east of Scotland on October 25th.

Gales were chiefly prevalent during January, the middle of February, the first week of August, and in December. The most serious occurred over Scotland on the 15th and 19th of February; over the Irish Sea, and generally in the north-west and north, on December 20th and 21st; and over Ireland and our south-western and southern districts on December 28th.—H. H. HARDING, F.R.M.S., Bristol.

The Metropolitan Public Gardens Association.—At the monthly meeting of this association held at 83, Lancaster Gate, W., last Thursday, progress was reported with regard to the laying-out of Leyton Square, Camberwell, and the Ironmongers' Garden, Kingsland Road, and respecting the planting of trees in Drury Lane, West Cromwell Road, and other sites. The Charing Cross, Euston, and Hampstead Railway Bill, which proposes to tunnel under a part of Hampstead Heath, and possibly to form a station on a site at its summit, was further considered, and a favourable communication was read from the London County Council with regard to certain amendments to secure the preservation of the Heath, the insertion of which in the Bill the association had asked the Council to obtain. It was stated that the Board of Agriculture had agreed to certify a scheme, in the promotion of which the association had assisted, for the protection of Ham Common and for placing it under a board of conservators. It was reported that about £3400 was still required to complete the purchase money of the forty-three acres proposed to be added to Brockwell Park, and that the association had taken part in a recent deputation to the London County Council to seek for its help towards raising this sum. The eighteenth annual report, for the year 1900, showed that the income for the year was £4480, or about £400 less than in 1899, the decrease being mainly attributable to the adverse effects of the war, whilst the expenditure amounted to £4250, not including a further considerable sum for work in hand. Amongst a number of sites under consideration were Hoxton Square, Bow Churchyard, and playing grounds at Raynes Park.

*Calanthe gigas.*

THE accompanying illustration and letterpress will probably meet the requirements of "Surreyite," but if not he must write again. Emanating from Messrs. J. Veitch & Sons' establishment, this hybrid was on its introduction hailed as an acquisition by all who saw it, and received a first-class certificate from the Orchid Committee of the Royal Horticultural Society. It was the result of a cross between *C. Sanderiana gigantea* and *C. vestita grandiflora*. It is bold, vigorous, and effective, the stout spike containing numerous handsome flowers, the sepals and petals of which are ivory white, and the lip rich rose.

Phalænopsis Schilleriana alba.

It is surprising how easily a rare and very valuable plant may be overlooked when shown with a number of others, some of much less value and beauty. At the Drill Hall on Tuesday, January 29th, Mr. Young, gardener to Sir Frederick Wigan, staged a very handsome group of choice Orchids, among which was a fine cut spike of this lovely albino. Yet I think it would be well within the mark to say that not one out of twenty of the Orchid lovers present noticed it, or if they did, gave a thought to the fact that not only is it a variety of great beauty, but absolutely unique, Sir Frederick Wigan's plant being the only specimen of it in Europe.

Little wonder that only the cut spike was brought on such a raw cold day, for though great care is of course taken by cultivators who bring of their rarest and choicest gems to these meetings, there is always a risk with such sensitive plants as *Phalænopsises*. The whole of this group, of which particulars were given in the Journal of January 31st, was very interesting, and one cannot help expressing a wish that amateur cultivators of means would show more frequently. There would then be no opening for the silly carping at the nurserymen who habitually help to make these meetings successful by their excellent exhibits of Orchids and other plants and fruits.

Dendrobium Rubens.

I have just received a lovely truss of three flowers of this very choice hybrid, one of the finest *Dendrobiums* in cultivation, and a most showy Orchid. *D. nobile* enters largely in its parentage, it being a secondary hybrid between *D. splendidissimum grandiflorum* and *D. nobile nobiliss.* The influence of the latter is plainly seen in the deepening towards the tips of the colour in the outer segments and the large, well-defined maroon blotch on the lip. This plant was raised by Mr. Cypher some years ago, and is now fairly well established in collections. The present is a good time to prepare for propagating these rare and valuable forms.—H. R. R.

Birthday Notes.

I HAVE been in the habit for many years of sending you a few lines on my birthday. I now write to say that few people could have read with greater interest and feeling than myself on this first day of February your description of the memorial trees at Frogmore. Would that it had not been written for so sad and mournful an occasion! How familiar, too, it strikes home to me! My wife was born in Windsor Park, educated at the Queen's School, and, as a matter of course, your *doyen* was known in his visiting days thereabouts to the gardeners at Frogmore. Alas! their places there now know neither them nor your old friend myself any more. Well, I have been a tree planter all my life; our late revered Sovereign was not many months old when I, quite unpremeditatedly, planted my first sapling (see No. 2529, page 224, of March 18th, 1897). My first premeditated orchard I planted 'anno 1837, and I propose on next Monday, February 4th at 4 o'clock P.M.—or at the time it is appointed to place our late beloved Queen by the side of the one she loved so well, in the mausoleum at Frogmore—a young Apple tree in my orchard, the stock of which I raised from a pip, and grafted two years since with a "Queen" scion, as another memorial.

I have a good collection of memorial evergreens and forest trees about Cot age Farm, sent to me by old friends whom you, Mr. Editor, knew very well, but who are now nearly all of them passed over to the majority, and the very best antidote I find for sleeplessness is to think I am accompanying them around to show them their grown-up fruitful presents. Caring care in nine cases out of ten will disperse as a cloud before the rising sun, and sleep, blessed sleep, will intervene. Try it; and if you will care to go to your old files of the *Cottage Gardener* you will find there a treatise on planting, written by "Upwards and Onwards" in the year 1853, which I am not sure of being quite acceptable to reprint at the present day. At any rate, how many I may have planted, or caused to be planted, between the interim of 1819 and 1901 goodness only knows, but our rector, his family, and myself mementoed the old century out and the new century in by planting fruit and forest trees in his garden and upon his glebe.

I do not intend further to trespass upon your time and space with my uncompleted works, further than to say I hope to be in full swing before long amongst my new seedling Potatoes. I have fine examples from the wild North American X

Fendleri, and my domesticated sorts; also from the wild castanium from the same latitude. Here is a judgment sent to me by a very good expert, well known to these pages. "Castanium cross, also sound and good, but not quite 'up' in flavour to your Suttons' Ringleader, still a long lead in that respect on International and its alias—a fine hit for the 1st." Poor old International! the for many years best-abused Potato in cultivation. I wonder how many of the confiding British public know how they have been gulled into partaking of thousands of tons of your patronymic, as imported young Potatoes from the Canaries and the Channel Islands. I hope nevertheless to supersede my International for the early markets by the above (shall I call it Edward VII.?), as it is very early, a better cropper, handsome in tuber, and dwarf haulm withal—a pollen cross from castanium with my Woodstock Kidney. I have succeeded also with intercrossing the pollen of castanium, with the result of my Rector of Woodstock



CALANTHE GIGAS.

and Fendleri, by gaining perfect spheres and kidney shapes; but of course these will require some more years of my existence to make them fit for the survival of commerce.

How will you allow me to end these notes? I know you do not like my poetry—invariably cut it out. Well, I have just alighted upon some lines by Elizabeth Barrett Browning—*place aux dames*—which seem so to fit what I should like to say in prose, and to accord with the beginning and end, that I am tempted to send them as a tail to my birthday paper. I copy the lines from "Home Notes," July 21st, 1900, page 60.

What are we set on earth to work for? say, to toil;
Nor seek to leave the tending of thy Vines
For all the heat of the day, till it declines,
And Death's mild curfew shall from work assoil.
God did anoint thee with His odorous oil
To wrestle, not to reign; and He assigns
All thy tears over, like pure crystallines,
For younger fellow-workers of the soil
To wear for amulets: So others shall
Take patience, labour, to their heart and hand,
From thy hand and thy heart and thy brave cheer.
And God's grace fructify through thee to all.
The least flower, with a brimming cup may stand,
And share its dewdrop with another near.

—ROBT. FENN, *Sulhamstead*.

Notes and Comments.

IN the Journal for January 31st, page 88, "G. H. H." relates some very plain truths bearing on the work and management of a garden, drawing comparisons between the ancient and modern as affecting gardens and gardeners. There is no doubt but that in taking his first responsible place a young gardener finds many difficulties, and the wonder is, when I remember the little thought and study paid to outdoor work by some young men, how they can take on such responsibilities with confidence and credit. Evidently "G. H. H." has met with similar examples, or he would not be so well provided with words so truly expressive of the trials of the ambitious and aspiring young gardener. It is quite true that employers and gardeners often look at matters from a different standpoint, and it is not a wise proceeding to try and press home a conviction on the gardener's part when his employer is not open to accept it. There are, however, few gardens of which a new gardener may be placed in charge where he cannot find plenty of scope for change and improvements that in a measure do not concern employers. Gardeners cannot go in at once and fell existing fruit trees, pull down old and erect modern greenhouses, and kindred subjects without the consent and co-operation of his employer, but he can vary the methods of dealing with the growth of fruits, vegetables, and flowers, where, as is often the case, there is abundant margin in the legacy of the past. No two gardeners conduct their work exactly on the same lines, and it invariably happens that the new man will find some fault with the old. It is much easier to effect improvements in a dilapidated garden than it is to hold one's own in that which is up-to-date in material and quality.

On the same page "H. D." discourses fluently (as he always does in matters pertaining to fruit cultivation), and many will and must agree that a better supply of good late English Apples is needed. When reading the excellent article in question, I could not refrain from a reflection of similar import bearing on the growth of late Grapes, that a few years ago was advocated, and has since been acted on by market growers. The result has had the effect of giving so plentiful a supply that prices are ruinous to the producer. Foreign Grapes are brought into competition, which cut down the value of all; and when prices rule so low the cost of producing them has to be modified, and in the end poor quality rules the markets. The planting of Apples proceeds yearly, and so does the importation of these fruits from other countries; and when the markets are filled with good English Apples, even of large size, and are brought into competition with the foreign fruit, then the profit will be the governing factor in its dealing with the question. We all know what is the effect of the harvesting of the English Apple orchards in years of plenty; they do not pay their railway charges, and a free extension of the planting of late sorts will carry in its train similar results. Yes, the question of storing and keeping is, as "H. D." remarks, one of vital importance, and unless provision is made in that direction, the varieties enumerated, excellent though the selection may be, would not extend the limit of the Apple season so appreciably as one might hope and expect.

"Melons," by Mr. Pettigrew, affords some excellent reading, and one so famous in fruit culture carries his readers with him in thought over vast fields of research. Melon culture varies in some degree with almost every cultivator. This being so, though readers may not agree with the methods advocated by such an able exponent as Mr. Pettigrew, they will, nevertheless, stand by their own, and modify them only as far as the circumstances of their individual cases demand.

As a Journal reader for many years the description of Mr. Pettigrew's grand Melon crops haunts me in fresh memories, and his papers continued at intervals of late have been read with an increased interest, though, as I have previously remarked, circumstances do not permit of direct imitation, because the many means are not present that make one successful whole.

"Pancratiums," by "J. B., Bucks," reminds me of Mr. Iggulden's famous plants at Marston. They, like *Eucharises*, have their "fads," and it comes not to every gardener's lot to emulate the example so eloquently given in the Journal photo on page 111. "The treatment we give," says "J. B.," "differs from that of many growers, as the plants are never allowed to become dry at the roots, but are kept well supplied with water winter and summer." In this particular item it does not differ so much from the treatment of others, but results are not always as pleasant as that so well portrayed in "J. B.'s" notes and photograph.

"Winter pruning is not a mere detail of garden practice; it is a science," says "L. E.;" and who will be bold enough to say it is not so when properly carried out? Science, however, does not always enter into the practice except in very crude and indigestible forms. There are varying reasons for this; some may be understood, others not. Cases can be cited where the pruning goes on from year to year without a thought given to the form of tree, the nature of the soil and its influence on fruit production, and the extent or absence of crops. Such pruners have a "knack"—if such vulgar phrase is permitted—of living in hope; if they do not realise their expectations this year they may in the next, and so on. In other words, there is an absence of science, or even a practical study of the question at issue. I remember some Apple trees that came under the supervision of a well-known gardener that were subject to the annual course of pruning by the workman to whom this work was entrusted. The trees were such a thicket of lateral spray that a sun ray must have been quite foreign to the centre of the tree, and fruit bearing, I need scarcely say, was beyond hope. What few were found were so completely out of character that it would defy the expert to recognise the sample, and yet never a thought was given to the modification of the practice so long carried out. In this case hope must have been long deferred and never realised. By a rational course of pruning, and the severance of some of the thong-like roots which burrowed into the subsoil, these same trees now produce high-class fruit that does not need the expert's eye to distinguish them. Your correspondent does well to insist on a vigorous development of branch, instead of the proclamation of the boastful amateur that his trees gave him a full crop the first year. One might well repeat, that in the common interest it is better to avoid such a course of folly. It is work that should be entrusted only to intelligent men—those who have an interest both in the present and future tree and the crops expected from it.—W. S., *Wilts*.

Lilies.

THERE is hardly any class of plants more popular than that of the Lily, and none to which greater additions have been made during the past half century. I am afraid it must be said of many of these, however, that they are not permanent additions to our gardens. We must be careful to remember that many which have usurped this name have no right to it, as, for example, that most chaste and sweet-scented flower the Lily of the Valley. The true Lily comprises about forty-five species, most of them to be found in the temperate regions of the northern hemisphere. Of these many have been introduced during late years. Japan and northern China have contributed largely to swell the additions to our gardens.

That *Liliums* are not easy bulbs to cultivate in ordinary gardens, few, I think, will deny, or else how is it that we have so many complaints of failure? It is not that they cannot withstand frost, for many of them have been subjected to severe tests in this direction, and some of the older ones have been cultivated for generations in our gardens. I do not mean to say that there are not some gardens peculiarly adapted for them where they will thrive, such a garden, for instance, as that of Mr. G. F. Wilson at Wisley, where they seem to grow like weeds, and continue from year to year.

I am, however, speaking of ordinary garden soils; while in the case of some species there is a difficulty which I do not think any gardener can comprehend. Look for a moment at the white Lily, *Lilium candidum*, of which we continually read mournful complaints that it is impossible to grow it successfully; yet how often do we see it in cottagers' gardens, where it has been established for years, flourishing in luxuriant style. Some persons will say the position is too dry, others again it is too moist; again we are told the soil is too light or too heavy. A contemporary has lately taken the opinion of some thirty or more of

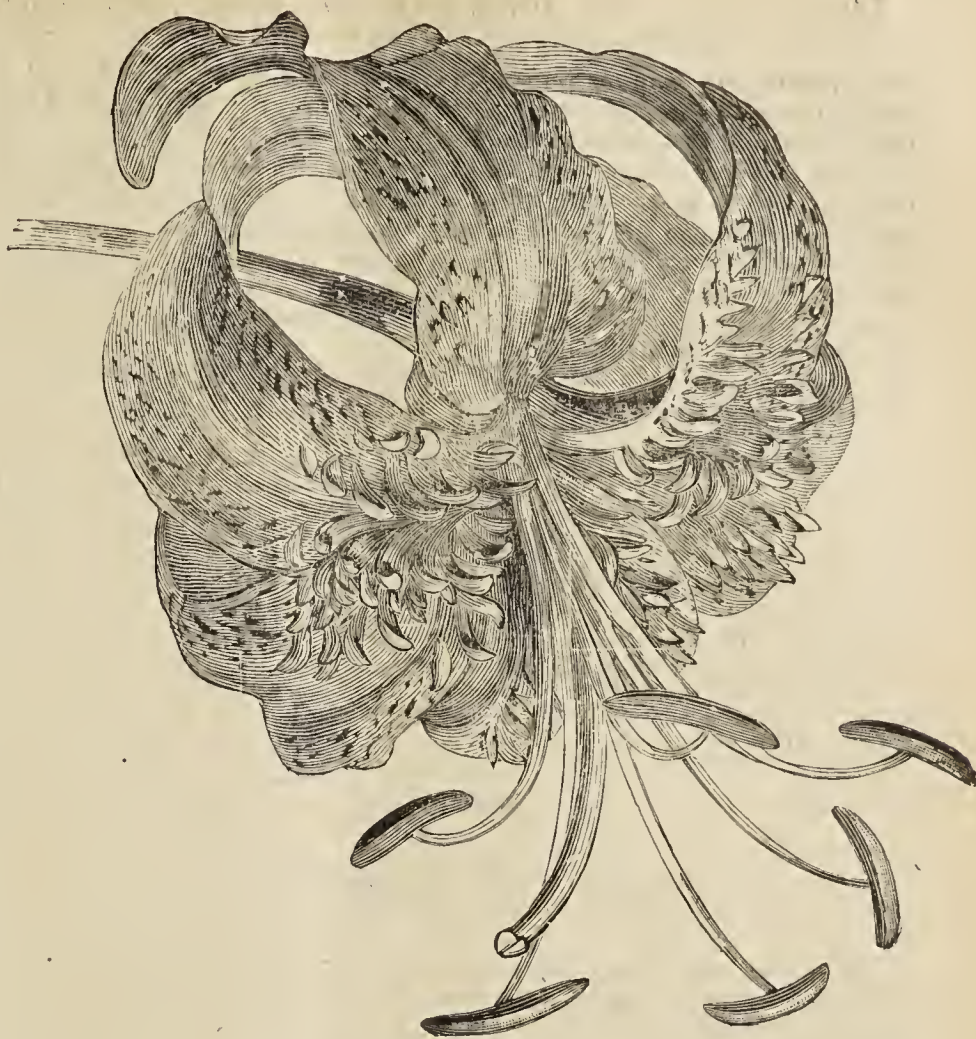
our best Lily growers as to the best species for cultivation, and one is surprised to find how few there are which are spoken of in very high terms. It is a fact that I think is much to be deplored, more especially as there does not seem to be any remedy for it. Take for example that most gorgeous and striking beauty, *Lilium auratum*, how impossible it seems to be to preserve the bulbs from year to year. It has done well, it may be, for a couple of years, and one hopes that it is going to establish itself; but in the third year it begins to show signs of diminution in vigour, the flowers are few and not so large as they have been, and when you come to take up the bulb in the autumn you find, alas! not that it has rotted, but it has broken into a number of tiny bulbs of no value to the cultivator. We have no means of ascertaining whether the same thing takes place in Japan, but we do know that some years ago a large quantity of the Lily gardens in Japan fell victims to a disease which made them utterly useless, and houses which had been in the habit of importing in large quantities were obliged to announce that their supply had failed. This was said to be due to over-propagation, and may possibly have been so.

This tendency has been exemplified in a curious way. A new Lily was introduced by the well-known firm of Wallace & Co., Colchester; it was said to be a natural hybrid between *L. auratum* and *L. speciosum* or *lancifolium*; both the habit of growth, foliage, and bulbs seemed to favour this notion; it is very richly coloured, and we anticipated much from it. I flowered it for two years, and hoped it was going to continue with me (of course in pots), but the third year it went the way of the *auratums*. There is one curious fact about these Lilies that I do not understand. They throw out a quantity of roots from where the flowering stem emanated, but they seemed to be of no value whatever for the future maintenance of the bulb, and unless you get good fleshy roots from the base of the bulb it is of no use trying to keep it.

Perhaps the most generally grown Lily is *L. testaceum*. It is said to be a garden hybrid from *L. candidum*. It is one which all those who sent in their reports of Lilies commended. It grows from 5 to 7 feet high, and the strong flowering stems have a goodly number of its beautiful apricot-coloured flowers; it is also known as *L. isabelinum* and *L. excelsum*. There are numbers of very beautiful Lilies which reach us from the warmer parts of North India and Burmah, but as far as I can see or have experienced their culture is hopeless, such as *L. nepalense*, *L. nilgherense*, and *L. Lowi*. The very beautiful



LILIUM CANADENSE.



LILIUM HENRYI.

L. sulphureum seems to be of a better constitution, and more amenable to pot culture. I have not tried it out of doors, but I have had it several years in pots, and have been greatly charmed by its exquisite colour. The North American *canadense* is very beautiful.

The Tiger Lilies have long been denizens of our gardens, and have always been a favourite with our cottagers. It is perfectly hardy, and has received since Mr. Fortune's visit to China two charming additions, *L. Fortunei* and *L. splendens*, equally vigorous as the old variety, but with more beautiful flowers. I hardly know what to say about *L. speciosum* (*lancifolium*), but I think they may be counted as those that do not want constantly renewing in our flower beds. The most beautiful of these is *L. Melpomene*, very rich in colour and good in constitution; they make a charming clump in the flower border.

The longiflorum section also does very well in most gardens. Additions are frequently made to it, putting forward strong claims for acceptance, and some of the new varieties do seem to be improvements. I say nothing about *L. Harrisi*, as I have never been able to do anything with it after the first year; it comes to us in immense quantities every year from Bermuda, whose climate has caused a remarkable development in increasing its vigour and blooming qualities. But although I have planted the bulbs every year after they have flowered in pots, I have never been able to keep any of them alive.

Lilium giganteum is another unsatisfactory Lily, that seems to exhaust itself in its first flowering, and you can find no trace of its bulbs afterwards. I have, however, seen that "E. V. V.," in her pleasant gossiping book, "Letters from Sylvana to an Unknown Friend," speaks of it as coming up stronger year after year, and this in the very North of Scotland, in Aberdeenshire. *Lilium Henryi* is one of our recent introductions, and is one of our most valuable acquisitions; it is a grand plant, growing sometimes to 8 feet in height, while its beautiful bloom entitles it to be called the orange-yellow *speciosum*. The umbellatum section, with its upright spikes of flowers of brilliant colour, amongst which I note the orange Lily, is also hardy, although I once or twice mysteriously lost large clumps of it, and which I must attribute to some parasitic attack. Flowering as these Lilies do in July, they are a very pleasant addition to the plants which fill our gardens in that flowery month. I do not touch upon any of those plants which are commonly called Lilies, but do not really belong to the tribe. It will thus be seen that although we must discard many as permanent additions to our gardens, there are still a number of very beautiful ones left for us to cherish and cultivate.—D., Deal.

Royal Horticultural Society.

Drill Hall, February 12th.

A SPLENDID display of fruits and flowers was brought together in the Drill Hall on Tuesday last, practically the whole of the space being occupied with meritorious exhibits. Clematis indivisa lobata was grandly shown by Messrs. W. Paul & Son, and Primulas in excellent condition came from several sources. Orchids were not very numerous.

Fruit Committee.

Present: G. Bunyard, Esq. (in the chair); and Messrs. H. Esling, W. Farr, G. Kelf, S. Mortimer, A. Dean, C. Herrin, W. Pope, H. Markham, J. H. Veitch, J. Basham, A. Ward, G. Wythes, F. Q. Lane, H. Balderson, A. H. Pearson, J. Smith, and the Rev. W. Wilks.

Messrs. W. & J. Brown, Stamford, contributed six dishes of Apple Barnack Beauty. The fruits were brilliantly coloured and in excellent condition. Mr. R. Maher, The Gardens, Tottenham Court, Newbury, sent Apples Dutch Mignonne and Court Pendu Plat; and the Rev. E. W. Jones, St. Mary's Vicarage, Spital Square, staged Apple Bray's Seedling. Mr. A. Russell, gardener to W. Roupell, Esq., Roupell Park, sent four boxes of Apples of Cox's Orange Pippin and Melon. The object was to illustrate packing for sending direct to the consumer.

Messrs. G. Bunyard & Co., Maidstone, were represented by a magnificent collection of 100 distinct varieties of Apples. The specimens were of good average size, and magnificently coloured. There was not a single weak dish in the entire exhibit, but the following may be cited as amongst the best:—Allen's Everlasting, Kentish Fillbasket, Rymer, Grange's Pearmain, Hambling's Seedling, Wagener, Cornish Aromatic, Mrs. Phillimore, Lord Burghley, Wealthy, Lord Derby, Mère de Ménage, Lady Henniker, Golden Noble, Calville Malingre, Belle de Pontoise, Warner's King, Nancy Jackson, Reinette Superfin, Bismarck, Waltham Abbey Seedling, Hornead Pearmain, Bramley's Seedling, Newton Wonder (remarkable colour), Cox's Orange Pippin, Cox's Pomona, Beauty of Kent, Sandringham, The Queen, King of Tompkin's County, New Hawthornden, Barnack Beauty, Lane's Prince Albert, Hoary Morning, Gascoyne's Scarlet, Royal Jubilee, Dutch Mignonne, Cellini, Bedfordshire Foundling, Foster's Seedling, Browlee's Russet, and Northern Greening (gold medal).

Messrs. J. Cheal & Sons, Crawley, arranged a stand of Apples in dishes and in baskets; there were a few Pears included in the exhibit. Amongst the best were Cox's Pomona, Warner's King, The Queen, Newton Wonder, Jubilee, Bismarck, King of the Pippins, Hoary Morning, Sandringham, and Hollandbury (silver Knightian medal).

Floral Committee.

Present: W. Marshall, Esq. (in the chair); and Messrs. C. T. Drury, G. Nicholson, H. B. May, R. Dean, J. Hudson, C. Jeffries, G. Reuthe, E. Molyneux, W. P. Thomson, W. Howe, J. F. McLeod, C. R. Fielder, J. Fraser, C. Dixon, W. Bain, C. E. Pearson, G. Gordon, H. J. Cutbush, H. J. Jones, W. J. James, E. T. Cook, E. H. Jenkins, C. E. Shea, and O. Thomas.

Messrs. G. Jackman & Son, Woking, contributed a display of spring flowering plants, comprising Narcissus princeps maximus, N. telamonius plenus, N. obvallaris, and N. Emperor. Helleborus Frau Irene Heinemann with its quaint blossoms was also conspicuous, while pots of blue Primroses, Grape Hyacinths, and a few tree Pæonies completed a pretty display (bronze Banksian medal). Perhaps the chief feature of the hall was the exhibit of Messrs. W. Paul & Son, Waltham Cross, which comprised a large display of Clematis indivisa lobata with a groundwork of Aralia Sieboldi. The Clematises were simply a mass of white, star-like flowers, and if each plant were separated it would be found to carry more than a hundred blooms of good white flowers. It is doubtful if Messrs. Paul ever contributed a finer display of this plant, which is so obviously adapted to the beautifying of the conservatory at this period (silver-gilt Flora medal).

A pleasing display of Ferns was that staged by Messrs. J. Hill and Son, Barrowfield Nurseries, Lower Edmonton, which consisted of good species of Asplenium caudatum, Dicksonia antarctica, Platycerium alcicorne, Lastrea patens, and a charming plant of Gymnogramma schizophylla gloriosa, while the remainder of the exhibit was conspicuous for the baskets and small specimens of Blechnum occidentale, Cheilanthes elegans, Lastrea erythrosora, and some well-grown plants of Selaginella emiliana. It is to be regretted that many of the plants had been affected by the frost (silver-gilt Banksian medal).

Messrs. J. Laing & Sons, Forest Hill, staged a pretty table of miscellaneous plants, which were particularly attractive at this season. The flowering plants included small plants of Azalea indica, Calla Elliotiana, Begonias in variety, and a few Anthuriums, which were tastefully arranged with some good Palms, Dracænas, Crotons, and Aralias, while a good front was formed of Marantas, Oranges in pots, and Isolepis gracilis (bronze Banksian medal).

Messrs. T. S. Ware, Limited, Feltham, occupied a long table with spring flowering plants, exhibited in small pots. The plants of Primula obconica grandiflora were conspicuous, as were also Primula acaulis alba plena, P. floribunda, and P. f. Isabelina. The small Cyclamen Atkinsi rubrum was effective, as were also Colchicum libanoticum and C. l. album (silver Flora medal). From Messrs. W. Cutbush & Son,

Highgate, came an attractive table of Dutch Crocuses, grown in large pots. They were exceedingly pretty, and included the following varieties:—Princess of Teck, Baron von Brunn, Sir Walter Scott, La Majestueuse, King of the Blues, Lady Stanhope, Othello, Mont Blanc, Purpurea grandiflora, and Melpomene (silver Banksian medal).

Messrs. Paul & Son, Cheshunt, staged a table of forced Lilacs, which were well flowered. The varieties most conspicuous were Madame Casimir Perier, Alba grandiflora, and Marie Legraye, but they evidently felt the cold morning. The same exhibitors staged some good bunches of H.T. Lady Battersea in good form, and some good bright Maréchal Niel (bronze Flora medal). Messrs. H. Cannell & Sons, Swanley, occupied a table, running the length of the hall, with a collection of Primulas, which included some good typical plants of P. sinensis, in which the following were attractive:—Eynsford Gem, Pink Queen, The Queen, Lady Roberts, Lovely, Surprise, and White Perfection. The Lady Primulas were represented by a good representative collection, while some hybrids between the two sections showed marked improvement, the best of which were Eucharis, a charming white; Firefly, red; Queen of Holland, white shaded with mauve; and Kentish Queen, a fine free-flowering white (silver-gilt Flora medal).

Messrs. B. S. Williams sent a group of forced flowering trees and shrubs. The double Peach, Kerria japonica fl.-pl. Clematis indivisa lobata, Staphylea colchica, and Lilacs were all in capital form, and made a pleasing display at this early period (silver Banksian medal). From Messrs. Barr & Sons, Covent Garden, came a collection of Hellebores and other spring flowering subjects. The former included good bunches of H. Don Quixote, H. caucasicus lutescens, and olympicus superbus, while the pots of Irises reticulata and arachnoides were noteworthy. The Narcissi in howls, though rather thin, were a step in the right direction.

A large table of forced Daffodils came from P. Purnell, Esq., Woodlands, Streatham Common, which made a most imposing display at this season. The plants were as a rule well flowered and developed. Some of the most conspicuous were Empress, Maximus, N. Golden Spur, Princess Ida, N. Horsefieldi, Barri conspicuus, Poeticus ornatus, Henry Irving (excellent), Victoria, and C. J. Backhouse (silver-gilt Flora medal). Messrs. J. Veitch & Sons, Ltd., Chelsea, sent pretty specimens of Lycopetalum chinense, with its quaint flowers borne in the greatest profusion, with a basket of Rhododendron indicum var. Kämpferi, a hybrid with small rosy salmon flowers, also a beautifully bright box of their hybrid Rhododendrons in superb form. Mr. J. R. Box, Croydon, arranged a pretty table of Primula sinensis, which comprised good specimen stands of King of the Blues, White Perfection, The Queen, The Kaiser, Box's Giant Pink, and Wickham Beauty, the whole forming a very pleasing exhibit (silver Banksian medal).

From Messrs. Heath & Sons, Cheltenham, came twelve plants of double Primulas in two varieties; the plants were full of bloom, and very effective. A group of Hellebores in large pans came from Mr. R. B. Leach, gardener to J. C. Eno, Esq., Wood Hall, Dulwich, which were worthy of more than passing note; they were certainly staged in the most effective manner, and bore evidence of good cultural skill.

Orchid Committee.

Present: H. J. Veitch, Esq. (in the chair), and Messrs. J. O'Brien, De B. Crawshaw, H. Ballantine, F. J. Howe, H. J. Chapman, W. H. Young, J. W. Potter, T. W. Bond, E. Hill, F. A. Rehder, H. A. Tracey, W. Cobb, J. Douglas, and J. W. Odell.

Messrs. B. S. Williams & Son, Upper Holloway, staged a small group of Orchids, in which varieties of Lycaste Skinneri were conspicuous. Messrs. F. Sander & Co. sent Lælia præstans Queen Alexandra, and Cypripedium callosum Sanderæ. Messrs. Heath and Son, Cheltenham, staged a few Orchids, including Cypripediums and Dendrobiums. Small exhibits of Orchids were contributed by Messrs. F. Morris, Bourton-on-Water; W. D. Bound, Reigate; W. Cobb, Tunbridge Wells; H. Thurgood, Stamford Hill; W. H. Young, East Sheen; J. Collier, Coventry; Thos. Rochford, Broxbourne; and one or two others.

Certificates and Awards of Merit.

Cypripedium T. W. Bond, Coundon Court variety (J. Collier).—This is a very handsome form. The dorsal sepal is brown-green, with deeper venations and minute spots; the margin is white. The petals are brownish at the base and rose at the extremities. The lip is pale claret (award of merit).

Dendrobium Wiganianum (W. H. Young).—This is from a cross between D. Hildebrandti and D. nobile. The wavy sepals and petals are white, with rose suffusions and the lip paper white with a throat yellow (award of merit).

Odontoglossum Loochristiense coundoniense (J. Collier).—A somewhat starry variety. The prevailing colour is soft yellow with bright brown markings (award of merit).

Odontoglossum Loochristiense Rochfordianum (T. Rochford).—A superb variety, the sepals and petals are canary yellow with chocolate brown markings; the lip is of similar shade with a white margin (first-class certificate).

Pteris cretica albo-lineata Alexandræ (H. B. May).—This differs from the well-known variety in being crested in some of the fronds (award of merit).

NOTES & NOTICES

Recent Weather in London.—On both Saturday and Sunday the wind continued very cold in London, though there was comparatively little frost. On Monday a few flakes of snow fell during the morning and afternoon, and it was very cold. There was a sharp white frost on the morning of Tuesday. Snow fell slightly on Wednesday morning.

Weather in the North.—The past has been a week of fine seasonable weather. Frost has ranged daily from 4° to 10°, and most days have been bright and invigorating. On Monday morning 10° of frost were registered and the day was one of the finest of the season.—B. D., *S. Perthshire*.

Death of Mr. Andrew Mitchell.—We regret that we have to announce the death of Mr. Andrew Mitchell, the esteemed partner of the well-known firm of Messrs. Dobbie & Co., Rothesay, who died suddenly on Saturday evening last.

Death of a Liverpool Superintendent.—It is with the deepest regret that I have to send you the announcement of the death of Mr. Mason, Superintendent of the Prince's Park, Liverpool, which took place on February 9th, after a somewhat lengthened period of ill-health. Gardeners of the older school who had resided in the neighbourhood will well remember Mr. Mason's kindly disposition, and the first-class way in which the pretty park was kept for the long period of thirty-five years over which he was privileged to preside.—R. P. R.

Ranmoor (Sheffield) Floral and Horticultural Society.—The annual meeting of the Ranmoor Floral and Horticultural Society was held at the Bull's Head Inn, Ranmoor, last Monday evening. Mr. Robert Colver presided over a large attendance of members. The secretary, Mr. T. Prouting, read the balance-sheet, which showed that the society had in hand the sum of £32 15s. 10½d., which the meeting considered to be a very satisfactory state of affairs, and the balance-sheet was unanimously passed. It was decided that Mr. Powell be asked to accept the position of president to the society again for the ensuing year, and that if he declined, negotiations should be made to secure some other gentleman in the district. Mr. Colver was re-elected treasurer, and Mr. T. Prouting was re-elected secretary. Mr. Geo. Addy was elected on to the honorary committee, and the following gentlemen were elected to act as the working committee:—Messrs. Sheridan, Holland, Gale, Hancock, Edgington, Askham, Andrews, Hutchinson, Wragg, Routh, Pickering, and Biggin. It was resolved that the show this year should be held on a Thursday instead of on a Monday, and the date was fixed for Thursday, the 22nd of August.

Devon and Exeter Gardeners' Association.—At last week's meeting of this society, held at the Guildhall, Exeter, Mr. John Coutts, gardener to Sir Thomas Acland, Bart., read an instructive paper on "Greenhouse Hard-wooded Plants." Mr. Coutts said that such plants were worthy of their most careful consideration. They were very little grown by the general run of gardeners compared with fifty years ago. He referred to those such as the hard-wooded Heaths, and Leschenaultias, which were at one time the special pets and favourites with the old school of gardeners. At the present day they were seldom grown, except by certain nurserymen, to be sold for decorative purposes, and their attention was chiefly confined to what was known as the soft-wooded Heaths. He, for one, regretted that the cultivation of this class of plants had fallen into such disfavour. It was principally due to the greater demand for cut flowers for decorative purposes, to supply which the gardener had been forced to turn his attention to those plants from which he could get a good supply of cut flowers. He himself had seen a good collection of hard-wooded plants consigned to the rubbish heap to make room for this class of plants. He then went on to briefly give the history of the hard-wooded plants, pointing out that as regards their native habitats they were almost without exception natives of South Africa, Australia, and New Zealand. Following this he dealt with the cultivation of a few of the most popular genera of these plants. Mr. Coutts, it may be mentioned, came from the Royal Gardens at Kew to Killerton.

National Rose Society.—The society's metropolitan show will be held in the Temple Gardens on Thursday July 4th instead of at the Crystal Palace on Saturday July 6th.

Prescot Horticultural Society.—This association has this season organised a series of winter concerts, the first proving very good. The second, held last Wednesday, was somewhat marred by the inclement weather, but the musical items were admirably rendered, and it reflects great credit upon Messrs. Mercer and Case, the president and secretary.—R. P. R.

Examinations of the Royal Horticultural Society.—The Society will hold its examination this year upon Wednesday, April 24th. Application should be made to the secretary, at 117, Victoria Street, Westminster, London, during February. This examination is held concurrently in different parts of the United Kingdom. No limit as to age, position, or previous training of the candidates is imposed.

Royal Horticultural Society of Southampton.—The annual report of the council of this society shows a most satisfactory state of affairs. In fact, as the report says, it is the first time for many years that the assets have exceeded the liabilities to an appreciable degree. We trust the prosperity may be maintained. The summer show and exhibition of Roses will be held on the Royal Pier, Southampton, on July 2nd and 3rd, and the schedule is so comprehensive that there can be scarcely any doubt a good display will be seen. The secretary is Mr. C. S. Fudge, 6, College Terrace, London Road, Southampton, from whom schedules and full particulars may be obtained.

United Horticultural Benefit and Provident Society.—The monthly committee meeting was held at the Caledonian Hotel on Monday evening last, Mr. Thos. Winter in the chair. Seventeen new members were elected. The actuary's report was read and approved. Mr. J. Clarke of Taunton asked to be allowed to withdraw a portion of his deposit account, but as Mr. Clark has not reached seventy years of age it could not be allowed. Mr. G. Morland, having reached seventy and being unable to work, was allowed 8s. per week until the next meeting, inquiries into his case to be made in the meantime. A vote of condolence to His Majesty King Edward VII. on the death of our late Sovereign Queen Victoria was passed, and will be sent at an early date. The treasurer was instructed to invest £650 in the best Stock available. The annual meeting will take place on Monday evening, March 11th, at 8 o'clock.

Croydon and District Horticultural Mutual Improvement Society.—The usual fortnightly meeting was held in the society's room at the Sunflower Temperance Hotel on Tuesday, February 5th. Fifteen new members were elected. Mr. W. Simpson, The Grange Gardens, Sutton, gave a most practical and interesting paper on the "Propagation of the Vine and Formation of Vine Border." He said that in the selection of most suitable site for the vinery a position somewhat elevated should be preferred; the drainage should be good and the compost a good fibrous loam of medium texture, cut from a pasture, to each ton of which add ½ cwt. of crushed bones, ½ cwt. Thomson's Vine manure, 2 bushels wood ashes, with an addition of old lime rubble, according to texture of loam. An interesting discussion followed, in which many of the members took part. The subject for the next meeting, on February 19th, will be "Gloxinias," and the dinner and social evening will be held on February 27th at the Greyhound Hotel.—J. G.

Scottish Horticultural Association.—The monthly meeting of the Scottish Horticultural Association was held last week at 5, St. Andrew Square, Edinburgh. Mr. Charles Comfort, Broomfield, took the chair as the recently elected president, and delivered his inaugural address. In it he, after acknowledging the honour that had been conferred upon him, took a retrospective and prospective glance at horticulture, noting the remarkable changes and improvements that had taken place during the past century, and pointing particularly to the greatly increased interest now manifested in the subject by all classes of the community. The whole horticultural standard had been raised, and as to the new century, this might be confidently affirmed, so that horticulture would be popular, and would be conducted on enlightened scientific principles, and, as a result, it should attain to a still higher degree of perfection than in the past century. The president was awarded a hearty vote of thanks. The secretary, Mr. Loney, subsequently read a paper on "The Gladiolus," by Mr. William Kelway, Langport, Somerset.

Liverpool Horticultural Association.—"Vegetables for Exhibition" was the title of a most valuable paper read before members of the above association at the last meeting by Mr. B. Ashton, gardener to the Earl of Lathom, Lathom House, Ormskirk. Mr. T. Foster occupied the chair. Everyone present acknowledged the paper to be one of the most practical ever delivered there. The preparation of the ground, times of sowing, and valuable wrinkles on staging were fully detailed. A long discussion, carried on by Messrs. Rainford, Stoney, Waterman, and Pinnington, brought out many points.

Taunton Deane Horticultural Society.—Amongst the West of England shows, that held annually in The Park, Taunton, stands very high. Its exhibitions, thanks to an energetic committee, are almost invariably striking successes, and it is hoped that the coming one, to be held on August 15th, will prove no exception to the rule. The schedule embodies about 180 classes, and sections are devoted to all grades of cultivators. The prizes in many of the classes are so handsome that they can scarcely fail to bring keen competition. The secretary is Mr. John S. Winsor, 16, Hammet Street, Taunton.

Liverpool Amateur Gardeners' Annual Meeting.—Mr. A. W. Ardran presided over the annual meeting held in the Common Hall, Hackins Hey, Liverpool, on Thursday last. The report was read by Mr. Muir, in the absence of the treasurer. The prize money was larger than last year, and the subscriptions also, and according to the good work done the deficit of £1 3s. 6d. was more than creditable to all concerned, for the entries had been more extensive, as shown, by the fact that members gained 244 points in 1899, and last year the great increase to 622. Mr. J. M. Smythe was elected president for the ensuing season; Mr. McGregor, who has done such valuable work as secretary, was unanimously re-elected; as was Mr. Robins, the treasurer.

Chester Paxton Society.—On account of the death of our late beloved Queen the usual fortnightly meeting was postponed to last Saturday, when Mr. John Jackson, Capenhurst Hall Gardens, read an able and instructive paper, entitled "The Cultivation of the Vine in Houses Constructed for Plant Culture." In the course of his remarks he dealt with the various phases of the culture of the Grape, from the time of planting to the ripening of the fruit, and described in a lucid manner the results of his experience, extending over a period of twenty odd years. The troublesome insect and fungoid pests, with which Grape growers are so much troubled, were also included, and valuable hints as to exterminating and keeping in check were given. A discussion, which was led off by the chairman, Mr. John Weaver, followed the reading of the paper; and on the proposition of Mr. N. F. Barnes, seconded by Mr. Miln, a hearty vote of thanks was accorded to Mr. Jackson.

Brixton, Streatham, and Clapham Horticultural Society.—At the annual general meeting of this society an interesting incident occurred. The hon. sec., Mr. W. Roupell, had intimated to the committee that it was not his intention to seek re-election, as he no longer felt equal to the work. The president, N. N. Sherwood, Esq., V.M.H., proceeded to state that he had been requested by the committee to present a testimonial to Mr. Roupell in the shape of a cheque contributed chiefly by members of the society, and to thank him for his valuable services as hon. sec. rendered during the past ten years. Mr. Sherwood spoke warmly of the progress the society had made under Mr. Roupell's management, and expressed regret that the society would lose the benefit of it for the future. He added that it would have afforded Mr. Roupell great pleasure to have read the many kind things said of him in the letters that accompanied the subscriptions. Mr. Roupell, with much emotion, thanked the president and all who had so generously contributed, and while regretting his inability to longer undertake the duties of secretary, assured the members that he would always give them all the help he could, and as a vice-president ever take an active interest in the society. The annual show was for a series of years held in the Congregational Hall on Brixton Hill and elsewhere in the neighbourhood, but in 1890, when Mr. Roupell became hon. sec., it was decided to hold the show for the first time in the large Hall at Streatham. Since then the society has steadily prospered, and every year the prize money has been paid in full. It is now thought, however, that the time has arrived when the show might be removed this year from Streatham to Brixton. The meeting was then adjourned till 30th ult., and the report of the sub-committee proving to be favourable it was at that date finally resolved that the annual festival (the forty-second) for this year shall be held at the Brixton Hall.

Primulas at Perry Hill.—The annual display of Primulas and other winter flowers at the Perry Hill Nurseries of Messrs. J. Carter and Co. is now in fine condition. Those who would like to see it should lose no further time; the nearest station is Forest Hill.

A Gloomy January.—January has succeeded in dispelling any false impression given us by the previous month. Nineteen sunless days and only nineteen hours of bright sunshine (in 1899 we had sixty-six hours), ten foggy days, three days of snow and twelve frosts, leave us little doubt as to the season, and, despite its closing bright days, have not tended to lighten the gloom which overshadows us. The mean night temperature, 34°, was below, and the mean day temperature, 44°, slightly above, the average for the month, the highest reading, 55°, occurring on the 28th, and the lowest, 21°, on the 9th. At Oxford it fell to 17° in the screen on the night of the 8th. The rainfall was 7.10ths of an inch, leaving us with a deficit of 1½ inch, which compares favourably with 4½ inches measured in 1877.

January Weather at Belvoir Castle.—The wind was in a southerly direction twenty days. The total rainfall was 1.07 inch, which fell on sixteen days, and is 0.71 inch below the average for the month; the greatest daily fall was 0.23 inch (snow) on the 25th. Barometer (corrected and reduced): highest reading, 30.621 inches on the 23rd at 9 A.M.; lowest, 29.232 inches on the 27th at 9 P.M. Thermometers: highest in the shade, 52° on the 21st; lowest, 21° on the 9th; mean of daily maxima, 41.58°; mean of daily minima, 31.77°; mean temperature of the month, 36.67°; lowest on the grass, 15° on the 9th; highest in the sun, 84° on the 20th; mean temperature of the earth at 3 feet, 38.22°. Total sunshine, 61 hours 55 minutes. There were thirteen sunless days.—W. H. DIVERS.

Leeds Gardeners' Friendly Society.—The members of the Professional Gardeners' Friendly Benefit Society met last week at the Green Dragon Hotel for the thirty-fourth annual dinner. Mr J. Inman occupied the chair. After the loyal toast had been honoured, the secretary (Mr. G. Carver) presented the annual report. It stated that, owing to the great amount of sickness which had occurred amongst the members during the year, the expenditure had considerably exceeded the income. The amount paid out in sick allowance was £139 19s. 2d., and in funeral allowance £37, the total payments for the year being £200 9s. The income from all sources came to £150 14s. 3d., thus leaving a deficiency on the year's working of £49 14s. 9d. This, deducted from the amount of capital at the end of 1899, left the latter at £1200 2s. 4d., which was equal to £8 12s. 8d. per member. After mentioning that the present membership of the society was 139, the report stated that during the year Mr. W. Sunley was presented by the members with a cash testimonial of £6, as a token of respect and appreciation of the valuable services rendered by him as secretary of the society for upwards of thirty years. Among the toasts which followed were "Success to the Professional Gardeners' Friendly Benefit Society," submitted by Mr. W. Green, and acknowledged by Mr. H. Wright; "The City and Trade of Leeds," given by Mr. W. Goodchild, and replied to by Mr. T. Clough (Messrs. Green and Son, Ltd.); and "The Honorary Members," proposed by Mr. J. W. Frankland (treasurer), and responded to by Mr. E. J. Batchelor.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1901.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
February.		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
Sunday .. 3	E.N.E.	deg. 36.2	deg. 34.5	deg. 39.0	deg. 35.2	ns.	deg. 38.0	deg. 41.2	deg. 45.1	deg. 30.0
Monday.. 4	E.N.E.	30.8	30.2	36.9	28.8	0.48	37.6	41.2	44.9	16.3
Tuesday 5	N.N.E.	33 0	31.8	35.2	30.3	—	37.3	40.8	44.7	30.5
Wed'sday 6	N.N.E.	35.4	34.2	38.0	31.5	—	37.3	40.6	44.7	26.2
Thursday 7	N.N.W.	30.9	29.4	39.3	30.2	—	37.1	40.5	44.4	22.4
Friday .. 8	S.E.	34.0	32.9	39.6	29.8	—	36.8	40.3	44.2	22.3
Saturday 9	W.N.W.	36.8	36.2	41.3	34.0	—	38.0	40.3	44.2	33.1
MEANS ..		33.9	32.7	38.5	30.7	Total 0.48	37.4	40.7	44.6	25.8

Dull weather and cold winds, principally from the north and east, have prevailed during the past week. A heavy fall of snow, mixed with rain, occurred on the night of the 4th inst.



Manures and Leguminous Plants.

THE statement made by Mr. J. J. Willis on page 73, that the fertilising action of farmyard manure is slow compared with artificials, is to my mind very misleading. A statement of this description should, if it is to be of any practical value to growers, be backed up by facts to prove the slow action, but where are they? Mr. Willis I am aware has brought forward certain experiments with manures on Potatoes that have been carried out at Rothamstead, but they are of no value, because if he had given the weight of Potatoes produced on other plots it would have shown how little the facts given were worth. He told us that a plot of poor land was dressed with 14 tons of farmyard manure per acre, and yielded 85½ cwt. of Potatoes. Another plot of the same kind of soil received a dressing of an artificial manure containing available nitrogen and minerals, and yielded 175½ cwt. per acre.

Why did the latter plot yield so many more Potatoes than the former? Mr. J. J. Willis wants us believe that it was because of the available nitrogen and minerals that was given in the artificial manure. If that were so, how is it that plot No. 9, which received nothing except 3½ cwt. of superphosphate of lime, yielded 121 cwt. of Potatoes? I also find that plot No. 4 besides getting a dressing of 14 tons of farmyard manure per acre, received 3½ cwt. of superphosphate, and 550 lbs. of nitrate of soda, and yet the yield of Potatoes on this plot was only 134½ cwt. There is one other little thing regarding this part of the subject Mr. Willis did not tell us, and that is, that the Potatoes were not planted until June 10-13. I will now leave him to let in a little light on these important points, for they are not at all satisfactory.—W. D., Herts.

Late Dessert Fruits.

VERY readily do I accede to "R. A.'s" suggestion, page 78, to give the names and treatment of the Peaches and other fruits which gave the late supplies here last year. I should be sorry to misjudge, but I thought I detected in "R. A.'s" congratulations a spice of satire, if not of slight censure. Whether this be so or not does not affect the question. At the same time it would have given me much greater pleasure in replying if "R. A." had deigned to give his or her name and address. It may be an old-fashioned idea, but I do like to know with whom I am discussing a subject. It is, to say the least, so much more satisfactory and pleasant than to be compelled to refer to single or double letters of the alphabet, which are most useful indicators of the chief points in a geometrical figure, but they are not always true indicators of the human figure.

The late varieties of Peaches were Sea Eagle, Walburton Admirable, Princess of Wales, Golden Eagle, and Salway. They are chiefly upright cordons, 30 inches apart, on a south wall coped with glass, which not only protects the ripe fruit from wet, but also from slight frosts. Fortunately there were no severe frosts here during last October and November, otherwise a slight protection of netting would have been hung along the front standards that support the coping.

The varieties of Plums were Late Green Gage, Late Transparent Gage, and Coe's Golden Drop, situated on an east wall also coped with glass. The two first varieties were gathered as required for use, but the latter variety was gathered when fully ripe, wrapped when quite dry in tissue paper, and stored in a cool dry room, whence they furnished a daily supply till the date already given.

The varieties of Strawberries were La Constante d'Automne, St. Joseph, St. Antoine de Padoue, and Oregon. These were chiefly in pots placed on ashes out of doors till they began to damp off, when they were transferred to a comparatively dry, intermediate house.

With reference to soil, one of our old-fashioned farmers being asked what was the nature of the soil on his farm, tersely replied "Flints." True, but only partially so, as on much of the land there are about 3 inches in depth of flints, and the same quantity of calcareous loam or marl resting on the chalk. In such a compost, largely intermixed with old mortar and brick rubbish, the trees here are planted, the roots being restricted to a space 4 feet 6 inches from the wall.

With reference to altitude and climate. The garden is situated 180 feet above the level of the sea; it is in a valley through which two rivers flow, and is bounded by high ranges of hills north and south. The climate is damp, and subject to the greatest changes of temperature. If carefully recorded observations made during the past forty years are correct, there is a greater average range of temperature in twenty-four hours at Wilton than at almost any other station throughout England. The average annual rainfall for the above period is 32½ inches.

With reference to the flavour of late fruits there are diverse opinions, but as beauty is said to be in the eye of the gazer, so flavour is on the palate of each individual. That which appears ugly in the eyes of one may be beautiful in the eyes of another, and that which may be distasteful on the palate of one may be delicious on the palate

of another. Knowing this, should we not hesitate before recklessly condemning any fruit, which may prove invaluable because of some special quality it may possess? Should we not rather let the test of flavour rest with those whom it is our duty to endeavour to please? As I have previously stated, the peculiar season of 1900 was the chief factor in enabling us to gather these late fruits.

I disclaim any credit beyond that of careful preservation, and if I hazarded a prediction that cannot possibly be realised I regret it—viz., "that these fruits might eventually be found plentifully on the dessert table at Christmas." At the same time, I can but recollect, on reflection, that the season of each of the kinds of fruit enumerated has during my experience, by scientific and practical means, been extended a longer period than the time I ventured to specify that they might be even yet further extended in the near future. Whether that prediction was a rash one or not time only can prove.—T. CHALLIS, Wilton House, Salisbury.

Rabbits in the Pleasure Grounds.

I do not know whether readers of the Journal find rabbits a source of much trouble in the garden. My experience has been that when present in goodly numbers planting is rendered difficult, and the safety of shrubs and trees cannot be assured, for the bark of some trees is very attractive to them. When snow is on the ground is the time when they are likely to be treacherous in their "pranks" with trees. There are wall trees here which still bear the marks of rabbits, as well as the relics of tar dressings applied as a means of prevention—that is on the outer sides of the walls to which rabbits have access. Rabbits are a terror to the flower borders as well as lawn trees, and only by protection with wire netting round individual plants, enclosing the whole border with wire, or excluding them altogether, can flower gardening be carried on with any degree of safety or pleasure. The latter is not easy, particularly after the wire had been in use some time. We have found that hedgehogs make passages through wire fencing, and once they effect an entrance rabbits easily follow until trapped or the wire is repaired. There is nothing equal to the sunk fence for pleasure ground boundaries, but there are unfortunately many gardens without them. There are perhaps few gardens surrounded by park land or game preserves that can be said to be free from rabbits.

The object of these notes is not to enumerate the many ills and evils attending the association of rabbits with the garden, as to emphasise the necessity in times of deep snow to remove some by means of the snow plough or shovel on grass inside or outside the lawn boundary, so that they can find a natural food. If they are deprived of this for a short time they soon seek food in "pastures new." Trees made proof against them with wire or tar dressings would be rendered easy victims of their depredations if the snow become drifted to any extent against the stems. Specimen Hollies here were seriously reduced some years since by the rabbits "ringing" the stems above the snow line; other trees suffered somewhat, including wall fruit trees from the same cause. By making a provision for them in clearing away the snow so that they can obtain a natural food we have suffered no inconvenience from them of late years. In the summer, when grass is accessible and plentiful, they will nibble the bark of some coniferous trees out of sheer mischief, and thus the necessity arises for keeping them outside the garden boundary even more strongly in summer than winter.—W. S., Wilts.

Ipswich Gardeners' Association.—A meeting of the Ipswich and District Gardeners and Amateurs' Mutual Improvement Society was held in the Co-operative Hall, Carr Street, last Thursday, when the Rev. A. Foster-Melliar, rector of Sproughton, entertained a good assembly of members with a little "Talk about Roses," Mr. Alan Turner being in the chair. The rev. gentleman, in the course of a most entertaining chatty address, referred first of all to garden Roses, dwelling at considerable length upon single examples, which he showed, as decorative flowers for the garden, had one advantage over the double Rose, for in the latter case no sooner was there a heavy shower of rain, than the whole bloom and bush was often a disagreeable sight. With the ideal single Rose it was not so; the rain might knock off the petals, but the next day the picture was not much the worse. Single Roses should be very large, and above all they should be perpetual. He confessed that he could not afford room in his comparatively small garden for flowers that bloomed only for a week or two. Amongst other varieties of garden Roses, the Rev. A. Foster-Melliar referred to the creeper or climbing Roses. He named the best varieties, and the circumstances under which they grew to best advantage, having regard to perpetuity. He showed that many Roses that were looked upon and treated as climbers were not in reality of that class. He treated the subject of the colours of Roses in a very amusing manner, quoting from a Rose catalogue a list so long that the new reading of it caused a good deal of laughter, as did also his criticisms of the various colours named. He alluded to a number of the older Roses; he named many of the more familiar ones, pointing out their respective qualities, and making not a few valuable suggestions as to the treatment of the special favourites. He also referred to the new Roses, and concluded one of the most entertaining and instructive lectures yet delivered under the auspices of the association by expressing the pleasure he felt at finding that the organisation was realising the objects of its founders.

Sawbridgeworth Revisited.

A FEW years ago I had the pleasure of visiting the celebrated nurseries of Messrs. Thos. Rivers & Son at Sawbridgeworth, and a week or so ago my second journey was made. The ground was buried beneath a snowy mantle, and the trees and hedgerows glistened under the midday sun. It was not an ideal day to inspect a fruit nursery, as locomotion was neither pleasant nor easy, while the exigencies of the weather had put a stop to the lifting and despatching of trees for almost the first time this season. Until the period mentioned the men had been continuously busy at this work, and the trees, well furnished with roots and branches, were forwarded to their destinations to be planted under climatal conditions that augured well for their future well being. As the land was enveloped in snow it was considered desirable to make the houses the principal feature of the visit, and these were entered under the experienced guidance of Mr. H. Somers Rivers, whose interest in the experimental work for which the firm has been famous for many years is profound. His elder brother and partner in the business, Mr. Alfred Rivers, seems to concentrate his energies upon the outdoor stock, though he is of course familiar with the indoor work as well. Their combined knowledge should insure the name of Rivers maintaining the high position that it has occupied amongst raisers of fruit trees for considerably over half a century.

The Orchard House.

The story of the first orchard house that was erected at Sawbridgeworth by Mr. Thos. Rivers (grandfather of the present generation) has been many times told in the pages of the *Journal of Horticulture*, and need not now be repeated. It was destined to almost revolutionise the production of fruit under glass, as the conviction of what could be done under the system was forced upon cultivators. None of the original houses now stand, but some of almost the earliest type remain, and it is curious to notice how little the principal ideas of the structures of the present day have changed from those of forty or more years ago. They are much larger, loftier, and lighter; but as with the first comers, wood enters largely into their construction, and the provision for ventilation is almost unlimited. The appliances for heating vary of course in the several structures, according to the uses to which they will be put, and in several houses of the largest size there is only one row of pipes. To keep the frost from the pots they are banked up with straw, this being removed and replaced with the changes in the weather.

A Superb Flowering House.

It is not the general rule in gardens to associate houses devoted to fruit trees with beauty as much as utility, but one thing is quite certain, that no more beautiful spectacle could be seen than the pot trees of Peaches and Nectarines in flower at Sawbridgeworth. No combination of flowering plants could produce a more superb picture. Though practically only one kind of plant is here represented, the remarkable differences in the size, substance, form, and colour of the flowers combine to make a perfect picture. There are hundreds of trees of various sizes and in slightly different stages of growth, and

all show their excellent health in the cleanliness of the wood and the development of the flowers. Fertilisation was proceeding apace, and it was easy to distinguish those that had been successfully operated upon by the deepening of the colour in the central portion of the flowers. There was an abundant promise of fruit, but even when the crop is ripe the house will be no more beautiful sight than at the moment when the flowers are at perfection.

A Brace of Novelties.

Immediately one enters the house one is attracted by a plant in a large pot carrying flowers that are conspicuous in the whole collection for their size, substance, colour, and the profusion with which they are produced. That is Peach Thomas Rivers. It is a variety that produces immense fruits of fine colour and excellent flavour; it is a most persistent cropper, and trees which were exhibited in London last year are now again clothed with flowers. Thos. Rivers will probably become one of the leading varieties in future years. The other conspicuous novelty is Duchess of York, an early variety that has come to stay. It also is a very free bloomer, and sets with the same ease and certainty as Thos. Rivers. Duchess of York has been exhibited in London and elsewhere several times, and has been with the entire appreciation of everyone who is competent to judge upon the merits of these fruits. The first named variety has already received the first-class certificate of the Royal Horticultural Society, and doubtless this honour will come to the second named during the ensuing season. There are, too, several novelties under trial, but time alone will prove their right to permanent positions and their ability to oust present day favourites.

The General Stock.

In the majority of the houses containing the bulk of the stock of Apples, Pears, Plums, Cherries, Peaches, and Nectarines in pots, the trees are not in the most interesting state for inspection. Indeed, one can only think of their prowess in past years and speculate upon their behaviour in the future. The doyen of the collection is a tree of Violette Hâtive Peach, which



PLUM PRESIDENT.

is about half a century old. It is a persistent producer of good fruit, and is now studded with splendid buds, so that a crop may be safely anticipated this season. One observes practically all forms of trees, and that the whole of them are remarkably clean and healthy. The work of potting is one of magnitude, as every tree is dealt with each year in this respect. It is commenced as soon as the wood is ripe in the autumn, and is continued throughout the winter. The trees make an immense number of fibrous roots, but these are largely torn away at each potting, and in the new soil fresh ones are formed annually. Some growers might be doubtful of the desirability of adopting such a system, but that is correct procedure is proved by the grand results that are attained at Sawbridgeworth. When a plant has been subjected to a certain method of treatment for over twenty years, little fault can be found with that method.

The Orange Houses.

It is not every day that one finds a couple of good-sized houses given over to Orange culture, but such is the case at Sawbridgeworth, where they are a great specialty. Both the members of the firm consider it a matter for regret that Oranges are not more extensively

cultivated in this country, as they are of easy culture, highly ornamental, and the flavour of the fruits is immeasurably superior to any imported fruit, probably owing to the fact that when ripe it is gathered and eaten. I had the pleasure of testing a specimen of the Egg Orange, and must say that it was superb. The great objection to Oranges is that they are "dirty" plants, the trouble being caused almost entirely by scale; if this pest is kept at bay the plants remain perfectly clean, and are then, whether in or out of fruit, particularly attractive. The Sawbridgeworth collection comprises all the principal varieties, both in the young and fruiting stages, and is a never-failing source of interest to visitors. A collection of Lemons bears the Oranges company, and these, too, are attractive and fruitful.

Fruit and Roses Out of Doors.

The area of ground under fruit and Rose culture out of doors is very great, and all types of trees and bushes are produced. The fruit trees range from the maiden to trees of unknown age. In one place there is a drift of Apples on the Paradise stock, all of which are at least forty years of age, and yet they show no signs of diminution of vigour; on the contrary they continue to produce excellent crops year by year. This, no doubt, is largely attributable to the stocks upon which they are worked, the Nonesuch and Broad-leaved Paradise being exclusively employed for bush Apples at Sawbridgeworth. The two trees illustrated represent the new Plum President, which received a first-class certificate from the Royal Horticultural Society last year, and a pot tree of the well-known Apple Emperor Alexander. All the trees seen on the occasion of my last visit were healthy and clean, and the same may be said of the Roses, to which large quarters are devoted. Despite the somewhat unfavourable weather the few hours at Sawbridgeworth were admirably spent, and the pleasure of a pilgrimage when the trees are bearing their burdens of fruit, and the Roses are diffusing their fragrance, is anticipated by—A LONDONER.

Soap from Trees.—There are several trees and plants in the world whose berries, juice, or bark are as good to wash with as real soap. In the West Indian Islands and in South America grows a tree whose fruit makes an excellent lather and is used for washing clothes. The bark of a tree which grows in Peru, and of another which grows in the Malay Islands, yield a fine soap. The common Soapwort, which is indigenous to England, is so full of saponine that simply rubbing the leaves together in water produces a soapy lather.

Pruning Pears.

THE articles on this subject by "N. H. P.," p. 458, and "S., Yorks," p. 557 (last vol.), show two opposite methods of renovating Pear trees. To cut away the horizontal branches to the main stem seems to be a system not generally practised, and it would, I am afraid, where the demand for the quickest returns is made, be a somewhat tedious operation.

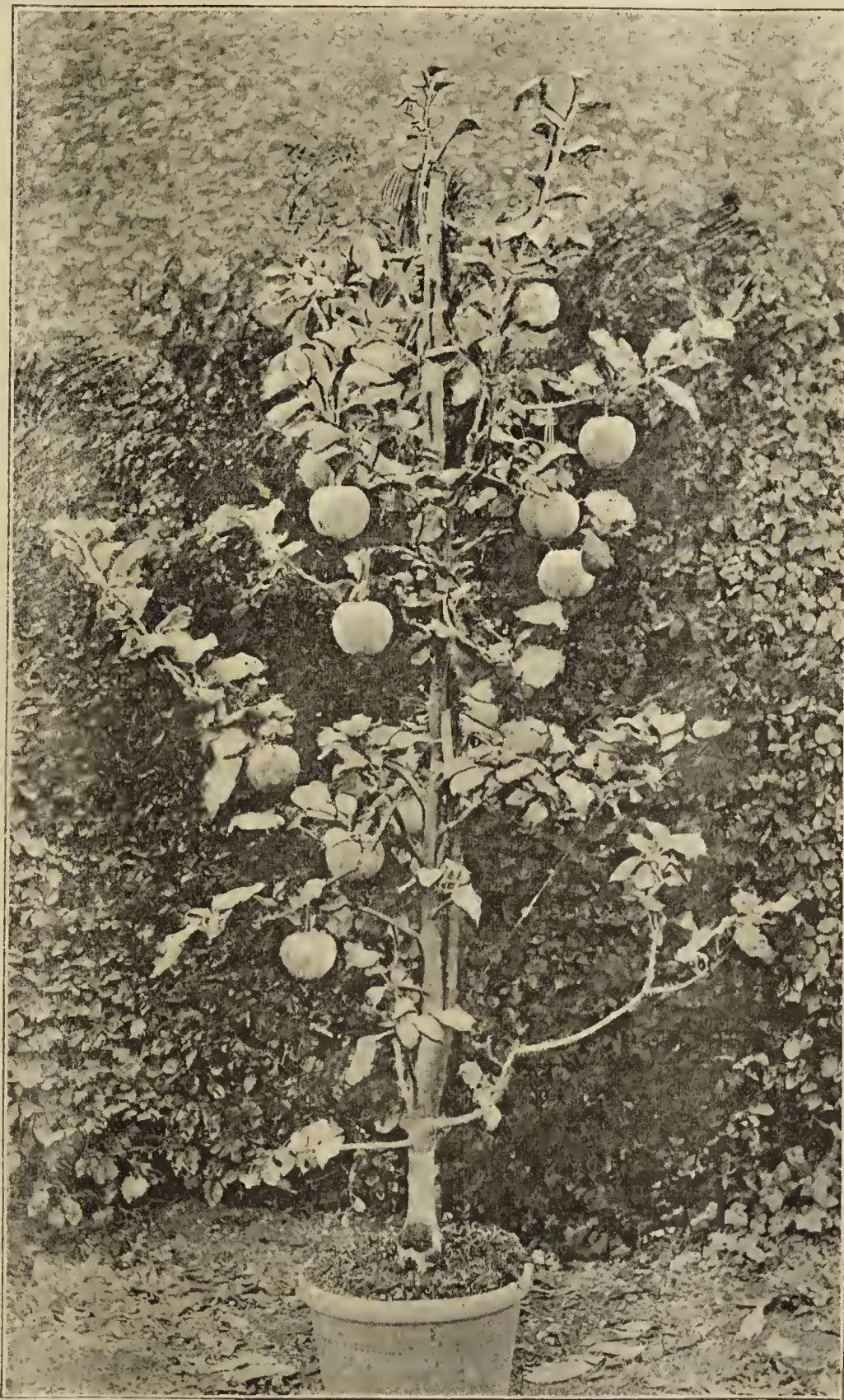
Operating on old trees can be done with absolute success without

going so far. Having had considerable experience with old Pears planted about fifty years ago, and which were at the time of my commencing a thicket of spurs some 18 inches from the branches, the fruit of which was of the most meagre description, I resolved to set about the work in real earnest to try to make an improvement. Every variety was suitable for the locality, so the idea of grafting on others was at once discarded. Immediately after the fruit was gathered we bared the roots freely and made a careful examination, finding some quite devoid of fibre and running in the cold subsoil. A trench was taken out 4 feet from the bole of the trees, by that means allowing any long straggling roots to be severed. Then as many as could be conveniently brought nearer to the surface were held in position by placing old pieces of broken flags underneath until there was quite a respectable number of roots to be seen. The surface soil I should mention was then lowered to the depth of 1 foot, and so the roots were brought more within the influence of the heat of the sun. The next thing was to see to the covering of them, and a compost consisting of loam, burnt refuse, old mortar rubbish, a fair sprinkling of lime, decayed horse manure, and some half-inch bones, was applied, but only to such a depth as would just cover, and over each a slight mulching of manure, which was left until spring. A commencement was then made with the branches, and this I had no hesitation in doing. They were taken in turn, and as there were three times more spurs than was necessary, the more unsightly were cut back to the branch.

Instead of leaving a jagged cut, sharp knives

were used, and the wounds carefully trimmed and touched over with a little wet clay. And so the old trees were left for the winter. I was more than anxious to see the result in spring, and as the sap began to rise in the thick trunks I saw that I had overcome a difficulty.

The first season we had sufficient Pears to make quite a respectable show, my employer as well as myself being delighted with the result, while the renewal of the trees was evidenced by some two or three young growths coming from where the old spurs had been removed. The best shoot only was left, the others being carefully removed. When shortening the laterals in the summer more useless spurs were removed, and the same pruning adopted during the following winter. In three years the trees were quite changed; there were no unsightly spurs, but the old branches were studded with young shoots bristling with fruit buds, and increasing crops each year.—R. P. R.



APPLE EMPEROR ALEXANDER.



Trees at Osborne.—One of the most interesting features of the gardens at Osborne is an avenue of trees planted by the Royal Family in February, 1862, to perpetuate the memory of the late Prince Consort, who died in December, 1861. To-day their tall and stately heads tower imposingly into the air. The first one, planted by the Queen, is an Umbrella Pine, on which may be seen a small tablet bearing the words, "For the late Prince Consort." A beautiful glade of trees directly facing the museum has grown up in commemoration of the marriages of the Queen's children.

Dædalacanthus nervosus.—The bright blue flowers of this Acanthad make it very useful for decorative work in winter and early spring. It was introduced to Kew from India in 1796, and it still maintains a foremost place as a winter-flowering plant. By rooting cuttings in spring, and growing the plants in a light, airy house throughout the summer, bushy plants are formed by autumn, which in due time will produce a large terminal and numerous side inflorescences from every shoot. If planted in a border in an intermediate house correspondingly larger plants are made through the medium of the more extended root run. This plant is more often spoken of as *Eranthemum nervosum* or *E. pulchellum*.—K. D.

The Mezereon.—One of the many, many seeds sown by the wild birds—though in this particular case not nearly as much as one could desire—is the Mezereon, sometimes called locally the Mezele. The Mezereon will be in blossom very shortly now; indeed, says a writer in a contemporary, I have seen notes in the papers to the effect that it is already in bloom, which is not so surprising, considering Gilbert White, in his "Natural History Calendar," mentions it flowering in December, while Jenyns, in his list, gives January 22nd as a date at which he has noticed it. It is a chaste and entirely delightful flower of much fragrance, and the pink blossoms, Almond tree like, come before the leaves. The Mezereon, by its odour, entices the insects to come and help to propagate it; and later on, by its berries, it entices the birds to swallow and distribute the seeds. Unfortunately it is all too scarce in England.

Such are the Glass Flowers.—"Where are the glass flowers?" is the question put by many a visitor to the museum at Harvard University. And when they are found the sightseer lingers long and admiringly over one of the greatest artistic marvels in the world. The "glass flowers" consist of hundreds of specimens of flowers and plants formed of glass, but with such most exquisite fidelity to nature that they appear to be real, every tint and marking, every tiniest detail, being faithfully reproduced. They are made by a secret process, the artists being a father and son in Germany, who, it is said, may let their secret die with them. As an instance of the wonderful workmanship involved, it may be mentioned, says a contemporary, that the very hairs which appear on the stems of certain plants are reproduced on the glass imitations! On one plant there are thousands of minute flowers, but everyone is perfect in the minutest detail, although it requires a microscope in order to ascertain the fact.

Jottings on Pines.—The plants recently started into fruit will, if in good condition at the roots, produce strong suckers. When these are large enough to handle, all, except one to each plant, should have the centres taken out in order to check the growths. To supplement the autumn potted plants select others which have been wintered in 7 or 8 inch pots. Procure fibrous loam with the herbage reduced, and when torn up in suitable compost add a quart of soot, two of wood ashes, and a pint of superphosphate to each barrowload. Drain the pots moderately but efficiently, dusting with wood ashes or soot so as to exclude worms, and keep the plants well down in the pots, ram the soil firmly round the roots, leaving sufficient space to admit of copious supplies of water being given when necessary. For Queens 10-inch pots, and 11 or 12 inches are suitable for those of stronger growth. A temperature of 60° to 65° will be sufficient for these plants, also for those potted last autumn, and 80° to 85° at the roots. Plants in beds about to be started into fruit must not have the heat at the base of the pots over 90° or 95°, or their roots will be injured.—PRACTICE.

Begonias.—Although Begonias have always been a favourite on this side, there has up to the present been a lack of appreciation of fuchsioides, a native of New Grenada, its brilliant scarlet flowers slightly pendant and of compact habit. However, I have noticed an awakening to its worth, and gardeners were busy last autumn in insuring a stock for decoration during the coming year. It requires only knowing to find it indispensable, like its relative, the light pink Gloire de Lorraine.—A. O'N., Dublin.

An Hotel Composed of Trees.—The most remarkable hotel in the world is in California, on the road between Santa Cruz and San José. It is a well-known fact that California possesses the largest trees in the world; and a shrewd hotel-keeper has conceived the idea of using a group of these mammoths, thus saving himself the cost of building or rent. The hollow trunk of one tree, whose circumference is about 22 yards, is arranged as a reception room, and the surrounding garden, sheltered by a thick roof of spreading branches, serves as dining-room and smoking-room. A number of other smaller hollow trunks make comfortable bedrooms, furnished in the most approved style; and some trees at a little distance are occupied by the hotel staff.

Strawberries in Pots.—The plants that were started in December have thrown up the trusses strongly, especially the varieties La Grosse Sucrée, Royal Sovereign, and Vicomtesse Hericart de Thury. The fruits having set freely and being well thinned are advanced in swelling. This should be accelerated in a temperature of 60° to 65° or 70° by artificial means, and 80° to 85° from sun heat, maintaining a genial condition of the atmosphere by damping and light syringing on fine afternoons. When the fruit commences to ripen a drier atmosphere will improve the flavour and colour of the fruit. Plants advancing to the flowering stage must not be hurried, 50° to 55° being ample by artificial means, and 60° to 65° with sun heat and free ventilation. More plants should be started without delay, such varieties as Noble, President, Sir Joseph Paxton, Auguste Nicaise, James Veitch, Lucas, and Sir Charles Napier affording grand fruit. Keep a sharp look out for aphides in the early stages, fumigating upon their first appearance.—A. G.

Japanese Liliun longiflorum Exportations.—From July 20th to September 20th, 1900, 20,111 cases of Liliun longiflorum were shipped from Yokohama to the following places:—

	Cases.	Bulbs.
England	10,518	1,860,450
Germany	819	132,390
Denmark	402	46,720
Holland	542	75,009
Austria	4	560
And to the United States and Canada ...	7549	2,192,034

To Hong Kong, India, Australia, and New Zealand there were shipped in all 277 cases containing 33,858 bulbs, making a total exportation from Japan of 20,111 cases containing 4,340,766 bulbs. At the time the report was made there were orders for October shipments of 175,000 bulbs for London and 30,000 bulbs for Hamburg. There were orders for 32,000 bulbs for shipment to Chicago in November, so that the total exportations of Liliun longiflorum bulbs from Japan of the crop of 1900 will amount, according to "Moller's Gartner Zeitung," to 4,750,000 bulbs. The above amounts probably contained some small lots of *L. auratum* and *L. speciosum*, but the great bulk were *L. longiflorum*.

Jacobinia magnifica.—The genus Acanthaceæ comprise a large number of good winter flowering plants for the conservatory. The genus Jacobinia contains a number of showy species, the one under notice being possibly the most easily managed of the half dozen or so species in general cultivation. It is a native of Brazil, and is recorded as having been in cultivation in the Glasgow Botanic Garden as long ago as 1834. The type is well known to everyone with its large ovate, acuminate, deep green leaves and dense terminal heads of rose coloured flowers. Although the type is plentiful enough in most gardens, there are a number of varieties of considerable merit which are rarely seen. Of these the most striking are *J. m. carnea*, *J. m. minor*, and *J. m. pohliana* are the best. Of these the second named is the best for pot work, as cuttings can be rooted during summer and flowered in 5-inch pots in winter. If after flowering they are potted and induced to break freely, plants less than 18 inches high, bearing seven or eight heads of flowers each, may be obtained in July. Planted in a border in an intermediate house the chief flowering time is early spring, though flowers are borne at almost any time during the year.—D.



Rooting Chrysanthemum Cuttings.

ONE would hardly imagine failures with so easy a plant to form roots, yet with the somewhat artificial modes of culture that prevail in the desire to obtain big blooms there are plenty of such each year. We put these failures down to coddling. It has gone forth in so many articles upon the subject that boxes covered with glass inside other glass structures must be prepared for the cuttings. Each one must have a separate pit; no air shall be allowed to reach them on account of the leaves being liable to flag, and in this air-tight box the cuttings shall remain until rooted. The glass must be wiped of accumulated moisture each day, besides an occasional sprinkling the leaves with water being necessary. We have a long time proved for our own satisfaction that all this trouble is not only waste of labour, but is wrong because it ends in a goodly percentage of dead cuttings.

Chrysanthemum cuttings root as easily as do the shoots of bedding *Calceolarias*, and they are as hardy. No more suitable place for them can be found than a cool pit, where the fire heat may be turned on in case of very severe frosty weather. Raise the soil so that the cuttings may be as near the glass as possible to get all available light, then dibble them in a couple of inches apart in a light sandy compost. One good watering in will, with a sprinkle in the morning on fine days, be sufficient in the way of moisture. No shade is required, and a little air may also be given to sweeten the surroundings. In about six weeks there will be nice sturdy little plants with abundant roots ready to put singly into small pots.

Another capital plan is to root the cuttings in shallow boxes. These are not more than 3 inches deep, and are filled with suitable soil. The cuttings are put in firmly 2 inches apart, and the boxes stood on shelves or anywhere close to the glass. The earth is well watered, and then the leaves dewed over daily in fine weather, and other thorough soakings are given as required. The leaves will flag for a time, but they gradually prick up, and by the time this is accomplished the cuttings will have formed roots. The only drawback to these modes is this—the cuttings should be potted off singly directly they are rooted, as otherwise the roots get into a tangled mass, and the plants thereby get a check when removed. The growth also draws up spindly in a very short time if potting is neglected.

As to choice of cuttings. When these are plentiful do not rely upon the stout sappy ones. The handling of thousands each season has made us observe the fact that firm, medium sized cuttings will outstrip the big ones, which are considered so necessary to subsequent success by many growers. December is an excellent month to put in the cuttings, at least for an exhibitor. A long season of growth is important in this case. If the young plants do show premature flower buds in early spring these may be taken away, and the growth will proceed satisfactorily. Some sorts are shy in giving cuttings, and must be obtained when they appear. But there is one item to note here. In instances of this sort it is advisable not to cut down the stems of the old plant very low. If left almost their whole length they "break" at the bottom more readily. The soil again with such plants should not be kept too wet.—SPECIALIST.

Bush Chrysanthemums.

WHERE quantities of flowers over a protracted season are required for cutting, the bush method of cultivation cannot be too strongly recommended, especially for amateurs, as a good show of blooms can be had in a small space. The plants not being tall are also well adapted for greenhouses or arranging in certain positions in large conservatories.

From the middle of January to the same time in February is the best time to root the cuttings. When the plants are 4 inches high top them for the production of side branches, shifting as required before they are at all root-bound into larger pots, and keeping them stocky in growth. For flowering 8-inch and 10-inch pots are large enough, using the largest pots for the strongest growing varieties. One topping is enough for some of the plants, but those required to be grown exceptionally large should be topped again when the shoots are 5 inches long. If a later stock of plants is required root more cuttings in March. Great care must be exercised at all times in supplying them with water, as so much depends upon the application of it in obtaining and preserving the foliage in good condition, by which the appearance of the plants is enhanced or the reverse when bushes are grown. For the smallest plants three or four branches are sufficient to retain from

the first topping, but in the larger size about eight is a fair number, and sufficient to produce handsome bushes.

If three shoots are produced from the first topping a dozen will spring from the second. Select from these the number required and tie them securely to stakes. At the natural break of the plants in August many more shoots will be produced, from which numerous side shoots will push and produce blooms in quantity. In this way st ff shoots from 1 foot to 2 feet long, thickly clothed with shoots and blossoms, will be produced, and be much appreciated in a cut state. Liquid manure given often, and in a weak state, is a safe and efficient stimulant, except during a long spell of wet weather, when a little of some approved chemical manure will assist the plants considerably.

An article of this nature would not be complete without the names of suitable varieties as a guide to intending cultivators. The following can be well recommended. White-flowered varieties are always appreciated, therefore I give this section the first notice. Elaine, though superseded nowadays in the large bloom classes, is still one of the best where a quantity of pure white flowers are required, as no other white can equal it in purity. Mrs. Weeks, Jane Molyneux, Madame Carnot, Simplicity, Mrs. J. Lewis, Mrs. M. Simpson, Queen of the Earlies, Lady Selborne, and Niveus, are all excellent. Yellow-flowered varieties are well represented by Phœbus, Sunflower, W. H. Lincoln, Miss Ethel Pilkington, Golden Queen of the Earlies, Klondike, Golden Gate, Modesto, Oceana, and Soleil d'Octobre. Other colours may comprise Edwin Molyneux, crimson and gold; Pride of Madford, crimson cerise; Royal Standard, deep crimson; Source d'Or, bronze; Charles Davis, rosy bronze; Eva Knowles, reddish apricot; President Borel, purple amaranth; H. J. Jones, rich crimson; Vivian Morel, blush mauve; Roi des Précoces, dark crimson; Cullingfordi, rich crimson; and Mrs. Alfred Tate, crimson and bronze.—E. MOLYNEUX.

Royal Horticultural Society.

Annual General Meeting.

THE large room that accommodates the Lindley Library at 117, Victoria Street, was decidedly too small for the comfort of the body of Fellows who attended the annual general meeting under the presidency of Sir Trevor Lawrence, Bart. The Chairman was supported by the members of the Council, and many of the more prominent horticulturists were observed in the body of the meeting. The minutes of the annual general and the special general meetings held last year were read by the Secretary and signed. The report and balance-sheet having been distributed to the Fellows, were taken as read.

Report of the Council.

The past year marks an era in the history of the Society. The New Charter, the third granted since the foundation of the Society, having received the assent of Her Most Gracious Majesty the Queen, came into force at the commencement of the year, and the first business which engaged the attention of the Council was the formulation of new bye-laws suitable for the same. The work was necessarily a long one; but at a general meeting of the Society held on July 3rd, the bye-laws as printed on pages 423 to 436 of volume xxiii. of the Society's Journal were formally adopted.

A corrected list of the awards made by the Society to plants, flowers, fruits, and vegetables to the end of 1899 has been issued during the past year. It has involved a great deal of labour and research, and the thanks of the Society are due to those gentlemen who assisted in the work, especially to those who prepared the section which deals with Orchids. The price of the entire volume has been fixed at 5s. (or the Orchid section can be obtained interleaved at 5s.), and the Council hope that many Fellows will take advantage of the information it contains in order to meet the unavoidably heavy expense incurred in its publication.

Chiswick Gardens.

Under the head of ordinary expenditure at Chiswick £1817 has been spent on the general work and maintenance of the gardens. The receipts by sale of surplus produce amount to £337, making the net ordinary cost of the gardens £1480.

The Council wish to call attention again to the good work done at Chiswick under Mr. Wright's superintendence, not only in the garden but among the students. During the last three years, for example—of our Chiswick students, one has taken a first-class in honours in science and art, one a first in advanced botany, two a first in elementary botany, at South Kensington; one has been appointed curator of the Botanic Gardens at Antigua; one is a botanical collector for the London School Board; eleven have taken a first-class in the R.H.S. examination in horticulture; five have set up in business for themselves; four have obtained positions at the Royal Gardens Kew; one at Kensington Gardens; two at large private gardens; six in large nursery gardens; one is studying at the Royal College of Science, South Kensington; one is editor, and another is on the editorial staff of a garden paper. Mr. Wright reports to the Council, "The demand for

energetic trustworthy young men from Chiswick is rapidly increasing; there is no difficulty in placing such in good situations, our supply being unequal to the demand, but they must all be workers. During the past year applications were received for twenty-eight head gardeners, three single-handed gardeners, six foremen, and ten journeymen."

Drill Hall Meetings.

At Westminster twenty-four fruit and floral meetings have been held in the Drill Hall, James Street, Victoria Street, besides the larger shows in the Temple Gardens on May 23rd, 24th, and 25th; at Richmond on June 27th; and at the Crystal Palace on September 27th, 28th, and 29th. Lectures and demonstrations have been delivered at twenty of the meetings.

The number of awards granted by the Council, on the recommendations of the various committees, are as follows:—Gold medals, 18; silver cups, 22; Hogg Memorial medals, 4; silver-gilt Flora medals, 48; silver-gilt Knightian medals, 20; silver-gilt Banksian medals, 35; silver Flora medals, 119; silver Knightian medals, 26; silver Banksian medals, 178; bronze Flora medals, 28; bronze Banksian medals, 43; first-class certificates, 68; awards of merit, 303; botanical certificates, 54; cultural commendations, 46. In addition to the above, a silver-gilt Flora medal was awarded to Miss E. Welthin Winlo for having passed first in the Society's examination; 95 bronze Banksian medals have also been granted to cottagers' societies.

The Council desire to draw the attention of Fellows of the Society to the more extended use which the Scientific Committee might be to them if they availed themselves more freely of their privileges in submitting instances of diseases of, or injuries to plants, caused by insects or otherwise. The Scientific Committee is composed of gentlemen qualified to give the best advice on all such subjects, either in respect to the prevention or cure of disease. The Committee is also glad to receive specimens of any subjects of horticultural or botanical interest.

The Temple Show.

The Society's great show held in May—by the continued kindness of the Treasurer and Benchers—in the Inner Temple Gardens, was as successful as ever, and it is a matter of satisfaction to the Council to find that this meeting is universally acknowledged to be the leading horticultural exhibition of this country. The best thanks of the Society are due to all who kindly brought their plants for exhibition, or otherwise contributed to the success of this show.

Crystal Palace Fruit Show.

The exhibition of British grown fruit held by the Society at the Crystal Palace on September 27th, 28th, and 29th, was, from an educational point of view, most satisfactory. Full particulars will be found in vol. xxv., part 3 of the Journal, which will be issued in the course of a few weeks.

As an object lesson in British fruit cultivation this annual show stands unrivalled, and is of national importance. Those who have visited it from year to year cannot fail to have been impressed by the wonderful advance which has been made in the quality of the hardy fruits exhibited. And as the importance of fruit growing in this country cannot well be over-estimated the Council invite Fellows and their friends to support them in their efforts to maintain and improve this exhibition by visiting it, and by subscribing to its funds. For it cannot be too widely known that the continuance of the show is absolutely dependent on at least £100 being raised by subscription each year towards the prize fund. The show involves the society in a very large expenditure without the possibility of any financial return. The Council cannot, therefore, continue it unless sufficient interest in it is taken by Fellows and their friends to provide £100 towards the prize fund, and this will, in coming years, be even more important than heretofore, as the directors of the Palace have signified to the Council that they feel compelled to decrease their contribution by £50. A glance at the list of subscribers will show how small has been the interest taken by the bulk of the Fellows. The Council would point out that this is not a local show with a few large prizes, but that a large number of small prizes have been provided in order to secure the best fruits in each section; special prizes have been allotted to market growers, and counties have been grouped in such a way that growers should not have to compete with exhibitors from localities more favoured by climatic conditions. These points will be still further extended should sufficient financial support be forthcoming. Subscriptions should be sent at once to the secretary, 117, Victoria Street, Westminster, and if the list prove satisfactory the schedule will be issued in April, and the show held on October 10th, 11th, and 12th, 1901. The list of subscribers for 1900 will be found at page 188 of vol. xxiii. of the Society's Journal.

An invitation has been received and accepted for sending a deputation to visit a show of Daffodils and other early spring flowers and produce, to be held at Birmingham on the 24th and 25th of April, 1901.

The Journal of the Society has been continued so as to enable Fellows at a distance to enter more fully into, and reap the benefits of the study and work of those actively engaged at headquarters. Vol. xxiii., part 3, vol. xxiv., containing a full report of the Hybrid Conference, and vol. xxv., parts 1 and 2, were issued during the year; vol. xxv., part 3, will be ready in March or as soon after as possible.

Examinations in Horticulture.

An examination in the principles and practice of horticulture was held on April 25th, concurrently in different parts of the United Kingdom, a centre being established wherever a magistrate, clergyman, schoolmaster, or other responsible person accustomed to examinations would consent to act on the Society's behalf, in accordance with the rules laid down for its conduct. No limit as to the age, position, or previous training of the candidates was imposed. Two hundred and thirty-six candidates presented themselves for examination. The names and addresses of those who succeeded in satisfying the examiners, together with the number of marks assigned to each, will be found in the Society's Journal, vol. xxiii., page 299.

It is proposed to hold a similar examination in 1901, on Wednesday, April 24th. Candidates wishing to sit for the examination should make application during February to the secretary, R.H.S. Office, 117, Victoria Street, Westminster.

The Library.

Valuable books have been presented to the Society during the past year by the Director of the Royal Gardens at Kew, Dr. Maxwell Masters, F.R.S., Messrs. H. J. Elwes, F.R.S., J. Wright, V.M.H., J. Veitch & Sons, A. P. Haig, H. J. Hooper, Mrs. Holman, and others, to all of whom the best thanks of the Society are due. A full list will be published in March, 1901, in the Society's Journal, vol. xxv., part 3. The Council desire to draw the attention of Fellows possessing horticultural or botanical books to the admirable method adopted by Mr. Elwes for enriching the Society's library without at the same time unduly depleting his own. It is fully explained on page 338 of vol. xxiii. of the Society's Journal.

The Committees.

The thanks of the Society are due to all the members of the standing committees—viz., the Scientific, the Fruit and Vegetable, the Floral, the Orchid, and the Narcissus Committees, for the kind, patient, and often laborious attention which they have severally given to their departments. Many of the members of these committees have to travel long distances to attend them. The thanks of the Society are especially due to all who are so good as to serve under these conditions.

The Society has also to thank all those who have so kindly presented plants or seeds to the Gardens. A list of the donors has been prepared, and will be found in the Society's Journal, vol. xxiii., page 340.

The Exhibitors and Readers of Papers.

The Council wish to express, in their own name and in that of the Fellows of the Society, their great indebtedness to all who have contributed, either by the exhibition of plants, fruits, flowers, or vegetables, or by lectures or papers, to the success of the fortnightly meetings in the Drill Hall. They are glad to find by the increased and increasing number of visitors that the Society's fortnightly meetings are becoming fully appreciated by the Fellows and public in general.

The selection of a suitable site for the new gardens of the Society in celebration of its centenary is still occupying the attention of the Council.

Several Fellows having represented the difficulty they find in identifying the attendants in charge of the different exhibits at the Society's meetings, the Council have caused a badge to be prepared which may be worn by attendants, but will carry no special right of admission or other privilege. These badges can be obtained at a small cost by applying at the Society's offices, and will bear the exhibitor's name. No other badges will be allowed to be worn by attendants.

The Society's Losses.

The Council have the sad duty of recording the death of seventy-nine Fellows during the year, and among them they regret to find the names of His Grace the Duke of Wellington, the Earl of Harrowby, Sir William Cunliffe Brooks, Admiral Sir Henry Fairfax, K.C.B., General Pitt Rivers, F.R.S., Edward Pynaert, R. D. Blackmore, Wellwood H. Maxwell, R. Milne Redhead, John Laing, V.M.H., John Fraser, V.M.H., E. J. Lowe, F.R.S., W. Vanner, W. A. Gillett, A. De la Devansaye, Mrs. Abbott, Miss Mary J. King, and others.

It is with feelings of the utmost sorrow that the Council record the loss during the past year of two of their own colleagues—Mr. T. B. Haywood and Mr. Philip Crowley. Mr. Haywood had for many years devoted his business knowledge and capacity ungrudgingly to the service of the Society, and by his personal qualities had endeared himself to all his colleagues. It is difficult to give adequate expression to the more recent loss caused by the death of Mr. Philip Crowley, who has so long and so ably filled the offices of Treasurer of the Society and Chairman of the Fruit Committee. A slight acknowledgement of his services to the Society was made during his lifetime in the Journal, vol. xxv., page 158, but his death is still so recent that words fail to convey the depth and reality of the Council's sense of the greatness of the loss they have sustained.

In accordance with bye-laws 61, 62, and 69 the Council duly appointed the Right Hon. the Earl of Ilchester to the seat on the Council vacant by the resignation of Mr. Arthur Sutton, V.M.H., and Mr. George Bunyard, V.M.H., to the vacancy caused by the death of Mr. Haywood. They also appointed Mr. Gurney Fowler to be Treasurer in the room of Mr. Philip Crowley until the annual meeting.

Annual subscriptions outstanding, estimated					
at	£5	5	0		
Garden produce	24	17	9		
Advertisements	102	15	6		
Rates and taxes (Chiswick) paid in advance	28	3	6		
Interest on investments	65	19	10		
	<hr/>			£227	1 7
„ CHISWICK SCHOLARSHIPS—					
Amount expended	39	11	8		
„ received	31	5	0		
	<hr/>			8	6 8
„ INVESTMENTS—					
2 $\frac{3}{4}$ per cent. Consols, £2122 8s. 9d. . cost	1892	11	3		
(2022 8s. 9d. of this sum is held by the Society, subject to the provisions of the will of the late J. Davis, Esq.).					
2 $\frac{3}{4}$ per cent. Consols, £1750 . . . cost	1768	5	0		
3 per cent. local loans, £3700 . . „	3925	3	0		
37,000 rupees, Indian rupee paper . „	2462	14	4		
	<hr/>			10,048	13 7
„ CASH AT LONDON AND COUNTY BANK—					
On current account	316	17	3		
Petty cash (head office)	2	7	7		
„ (Chiswick)	0	16	0		
	<hr/>			320	0 10
				<hr/>	
				£10,604	2 8

Discussion on the Report.

On rising to formally move the adoption of the report and balance-sheet, Sir Trevor made reference to the loss the country had sustained in the death of the Queen, and mentioned the fact that the Council had sent on behalf of the Fellows a wreath. In coming to the more immediate business, he observed that there were few matters that required special mention from him. He laid stress upon the advantages that accrued to those who underwent a course of practical training at Chiswick, and at a later period referred eulogistically to the annual examinations held under the auspices of the Society; he thought it probable that the examiners would soon be raising the standard of excellence. Continuing, the President alluded to the complaints of lack of accommodation in the Temple Gardens, but observed that under the present arrangements by which the Society was welcomed by the Inner Temple no more room was available. He hoped they would long enjoy those annual reunions, but observed that should any difficulty arise the Earl of Ilchester had promised to place the grounds of Holland House at the service of the Society. This announcement was received with enthusiasm. He thanked the readers of papers, and then passed in review the difference in the status of the Society in 1857 and at the present time. The membership in 1857 was 1329, and now 4750, but he thought the good name of the Society had improved equally as fast if not faster than the membership. Sir Trevor adverted briefly to the death of several members, particularly Mr. P. Crowley and Mr. T. B. Haywood, who had both been members of the Council. He thought the thanks of the Society were especially due to Baron Sir H. W. Schröder, Professor Michael Foster, and Sir W. Thiselton Dyer for the splendid work they had done at various times on behalf of the Society.

In supporting the motion Mr. Arthur W. Sutton, V.M.H., tendered the heartiest thanks of the Fellows to the Council for its excellent work, and to the Rev. W. Wilks and Mr. S. T. Wright. He alluded also to the losses the Society had sustained by death. The speaker complained somewhat of the scanty reference in the report to the new garden, and trusted that the Fellows would be kept quite up to date in this matter, as it was one in which every Fellow was deeply interested. Having this assurance from the Council would prevent any necessity for discussing the matter at the present moment.

Surgeon-General Ince, speaking in support of the motion, called particular attention to the question of affiliated societies, and considered it a section that might advantageously be greatly extended.

Mr. H. J. Elwes congratulated the Society on its finances, but thought the Council might have given more information respecting the new garden, especially after what transpired in April of last year. He urged the fact that the future of the Society largely depended upon the question of the new garden, and insisted upon the matter having the fullest and most mature consideration. He regretted to see the condition of some of the houses at Chiswick, and recommended that they should be kept in better repair.

Another speaker was doubtful whether the Society wanted a garden at all, and was quite of the opinion that the funds of the Society could be put to decidedly better use.

In replying, Sir Trevor first remarked upon the omission he had previously made—namely, to thank the garden and clerical staffs for their work for the Society. He then pointed out some of the difficulties in the way of repairing the Chiswick houses. In reference to the new garden many sites had been discussed and inspected, but, so far, none that the Council considered of sufficient importance to put before the Fellows. He stated definitely, however, that the Council would take no steps whatever without the full consent and authority of the Fellows. This assurance was received with evident pleasure by the Fellows present. The report and balance-sheet were then adopted without dissent.

Mr. G. Gordon, V.M.H., proposed, and the Rev. G. Henslow, V.M.H., seconded, "That a vote of thanks be accorded to Sir Trevor Lawrence, Bart., for presiding," and this was carried by acclamation. Sir Trevor thanked the meeting, and then alluded to reports he had heard relative to the desirability of excluding nurserymen from the Council. This he considered would be a grave error, as their business experience was of the greatest value to the Council in its deliberations.

Early Hardy Flowers.

PLEASANT as it is in winter's days to enjoy the warmth and beauty of the indoor garden, with its brilliant flowers protected by glass from the storms of the season, and the cold kept at bay by the use of hot-water pipes or flues, it is not everyone who can have this pleasure. Either from necessity or choice there are many who have to content themselves with the beauty of the brave flowers which defy the winter without shelter or only need the protection of a frame to bring them to perfection. To such, these notes are dedicated with a desire to help them in their pleasant task of drawing true pleasure, even while it seems difficult or impossible, from their gardens.

First, perhaps, must come the Christmas Roses, as the varieties of *Helleborus niger* are called. Given a strong soil and a shady position in summer, they will improve from year to year, well repaying their owner for the hand-light, frame or cloche they should have at blooming time. They are followed by the beautiful Lenten Roses, which are now so varied in their colours, tints, and markings as to merit the attention of a specialist. Lovely as are many of the new varieties of *Helleborus orientalis*, some of the wild species are charming, too, with their soft-coloured flowers and quiet colouring. Given the same treatment as *H. niger*, they are exquisite.

Among the earliest flowers of the year are the little Heaths, such as *Erica carnea* and *E. c. alba* or *herbacea*. The latter is always the earlier here, and it has been for a while beaded with its pretty white flowers, less densely crowded than in the case of the typical *carnea*. We have no prettier plant in February than a big bush of this flesh coloured Heath. The earliest of the season in the south is *E. hybrida*, said to be between *E. carnea* and *E. mediterranea*. I have it on trial, but I do not think it is likely to anticipate *carnea* in our northern gardens. However, this has been an exceptional season, and another year may be a better test of its worth for early flowering.

The Snowdrop must, of course, ever be considered one of our indispensable early flowers. Its purity, its grace, and its hardiness all endear it to us and make a garden without its flowers barren indeed of delight at the earliest season of the year. One dare not venture now to tell of its varieties or its species; all are lovely in their way, and their cultivation needs no guiding hand.

When the year first comes in it finds in bloom some of the *Crocus* species, and before many weeks have passed there are numbers of its lovely flowers to lighten the garden. There are many to choose from nowadays, and one can only at

present refer to such species as the yellow *C. vitellinus*, the fine *C. Imperati*, the lovely *Sieberi*, *alatavicus*, *chrysanthus* in a number of forms, and the showy *aureus*. One could talk long enough about these were it not beyond the scope of these notes to enter into detail. Glowing in the grass, or showing bright against the black earth of the borders, are the cups of the *Eranthis*, a little flower we never tire of. I have, however, spoken of it so recently that one need only to refer to it to show that it is not forgotten.

Admittedly giving some trouble, yet so charming as to well reward the pains they require at our hands, are the earliest of the Irises. So trying is the weather they often encounter that it is wise to give them shelter, and so much do the slugs delight in them that in gardens where they abound it is well to adopt some plan of keeping off these pests. Yet these flowers are well worth our pains, whether we grow the lovely *I. unguiculatus*, which likes a stony, sunny place and some glass above, or the now numerous plants recognised as near to *I. reticulata*, besides other species which are plentiful, though a little expensive for their size. We can enjoy the pretty, tiny, yellow *I. Bornmulleri*, the exquisite *I. Bakeriana*, *I. reticulata*, with its several varieties, and other little flowers whose names can be found in due course in the catalogues of firms which advertise in the Journal. In



IRIS BAKERIANA.

a cold frame, on the rockery, or even in the choice border—in the two last with glass above the flowers—they will give delight as we stand or stoop over them to admire their perfect loveliness.

Then we have also the flowers of the earliest Snowflake—the form of *Leucium*, known to some as *L. carpathicum*—which comes early, and is very beautiful with its white flowers so charmingly tipped with green. It calls for no glass above, but stands for long the changes and storms of “February fill-dyke.” Then there is the bonny little *Cyclamen Coum*, which, if we please, can now be procured in crimson, white, lilac, and rose forms. It is ever charming, and gives unalloyed pleasure as we look upon its little flowers and round, thick leaves.

The earliest of the Daffodils often come with February in the shape of the unique little *Narcissus minimus* or the charming *N. pallidus præcox*, though it is a pity that the latter does poorly in many gardens. The Daffodils are so fair that their advent gives us much and rare delight.

What, too, is a garden early in the year without the green and golden sprays of *Jasminum nudiflorum*? It is too often absent from gardens because some think it “common,” yet it gives us a bit of bright colour when and where we want it much. Robert Fortune gave us in his plant-hunting career no more useful flowering shrub than this, which one can hardly use it amiss for winter bloom, though it might well be combined with a *Clematis* for succession in the days when winter has been left far behind.

Then we have *Prunus Davidiana*, with its white or pink flowers wreathing its leafless branches with so much beauty. Another boon it is for those of us who spend our winters at home. One might tell also, did not space forbid, of *Chimonanthus fragrans*, with its perfumed flowers; of *Hamamelis*; and of other shrubs and flowers which can yield us pleasure in our gardens until spring comes, with its overflowing chalice of Nature's bounties.—S. ARNOTT.

Young Gardeners' Domain.

Grevillea robusta.

THERE are few plants raised from seeds that are of such great value to the gardener, whether for house decoration as small specimens, or to associate with flowering plants in the conservatory. Here we also use it extensively for the flower garden, as having a number of vases on a terrace we find it makes a grand plant for the centre, surrounded with Ivy-leaved “*Geraniums*.”

We usually sow our earliest seeds about the middle or the end of January. Prior to sowing the seeds are soaked in water and placed in a warm house for about twenty-four hours. We then sow in a well drained pan on a light porous compost, on the top of which we place a thin layer of silver sand, in which the seeds are placed edgewise rather thinly. The pan is then placed in heat, and the soil kept pleasantly moist. When the plants are large enough to handle they should be potted into 3½-inch pots, using a light compost to induce free root action. When the pots are fairly full of roots the plants should be transferred to 5 or 6-inch pots, the soil being a little heavier than at the previous potting.

During the earlier stages of growth the plants should be kept in a warm, humid atmosphere, and as they attain to a desirable size they should be hardened for outdoor purposes, and those retained for house decoration should be placed in a cool house, and when the pots get full of roots they should be given some stimulant, such as sheep manure water and an occasional dose of soot water (about the colour of pale brandy), which helps to preserve a dark colour in the leaves.

In the autumn we frequently lift the old plants that have been plunged in beds or vases and keep them through the winter in a greenhouse. Then early in the year we cut them down rather hard and place them in heat, keeping well syringed, and as they grow they should be placed in larger pots, when they will make useful stock for the summer.—W. HITCHMAN, *Moor Hall, Stourport.*

Cherry Crop in Danger.—At the last meeting of the Royal Agricultural Society a report by the society's consulting botanist, Mr. W. Carruthers, F.R.S., was presented on a serious disease in the Cherry orchards in Kent, which in the early summer affected the leaves and fruit simultaneously, rendering the latter unfit for market. The report recommended as the only method of stamping out the disease the gathering and burning of all diseased leaves, and it stated that it was the more essential that steps should be taken for the destruction of the dead leaves because of the abundant presence of the living fungus that had been observed in them. It would be a serious source of danger to the new crop if these active fungi were to take possession of it. To be efficient, this collecting and burning of the dead leaves must not be done in a solitary orchard here and there, but must be carried out throughout Kent. It was decided that this report should be printed as a leaflet, with illustrations, and freely circulated amongst fruit growers in Kent and other fruit-growing districts.



Fruit Forcing.

Vines.—*Early Forced in Pots.*—The Vines now in full development of leafage will require abundant supplies of nourishment, and must not sustain any check, either through dryness at the roots or in the atmosphere. If the pots are stood on a hard base, insert strips of slate within the rim, and top-dress with rich turfy loam and decayed manure in equal parts, intermixed with a handful of superphosphate to each peck of the compost. Where the pots are plunged in fermenting material, strips of turf about 3 inches wide should be laid over the rim so as to form the necessary dish. The turves should be watered with liquid manure, and the plunging material kept moist, especially where the roots are allowed to find their way from the bottom of the pots, and thus, with plenty of feeders, secure well grown berries. Top-dressings of some approved fertiliser also should be supplied occasionally, and liquid manure employed for watering, though be careful not to keep the soil sodden and induce bad colouring and shanking.

To encourage the swelling of the berries keep the laterals below the bunches somewhat closely pinched or even rubbed off, but allow those level with and above the fruit more liberty. Avoid overcrowding, as only foliage fully exposed to light elaborates the juices fully and healthfully. Careful treatment is necessary in ventilating at this early season, avoiding cold currents, which cause “rust,” prevent free swelling, and sometimes cause cracking of the berries. Ventilate early in the day, affording a little air at 70°, increasing it with the sun heat to 85°, closing between that and 80°, and if an advance follow to 90° all the better. If red spider appear, let the affected leaves be promptly sponged with a weak solution of soft soap and water, keeping the atmosphere ammoniated by damping the paths and walls occasionally with liquid manure.

Early Forced Planted-out Vines.—The house started early in December will need a temperature of 65° at night, and 70° to 75° by day whilst in flower, keeping the temperature somewhat drier by free ventilation, leaving a little at night, yet a genial condition of the air must be insured by keeping the floors sprinkled two or three times a day during bright weather. Any shy setting varieties may have the pollen distributed by a camel-hair brush. Stop the laterals at the first leaf below the fruit, but those beyond the bunch may be allowed to make two or more joints, provided there is space for the full exposure of the leaves to light and air. Avoid overcrowding, it being better to reduce the laterals, yet the fruit retained must be proportionate to the foliage. Where the Vines are heavily cropped they make correspondingly little lateral growth, and the Grapes frequently do not colour, but the same thing occurs with an excess of foliage, simply because sufficient chlorophyll is not formed for conversion at the time of ripening into the desirable black, purple, or amber colour.

Vines Started at the New Year.—As these are coming into leaf and showing fruit it will be necessary to attend to disbudding, proceeding gradually, removing the weak and less promising growths in the first instance, then give further attention when it is seen which shoots are likely to afford the best bunches. One bunch on a spur is as much as is likely to finish satisfactorily, but if there be space, the spurs being widely distant along the rods, two shoots may be left, of which only one is to carry fruit. When the Vines are weak it is an excellent plan to allow growth to extend where there is space, even cutting out some growth to allow this, so as to secure stouter wood, large and plump eyes, and better bunches the following season. Give the needful attention to outside borders in protecting them sufficiently to prevent chill by frost, heavy rain, or snow.

Houses to Afford Ripe Grapes in July and August.—The Vines must now be started, and as they break most evenly and strongly when assured a moist genial atmosphere the rods should be damped three times a day, and other surfaces sprinkled. Maintain a temperature of 50° at night, 55° by day, and 65° from sun heat, until the buds move. If the inside border has become dry, bring it into a moist but not sodden condition by repeated applications of water of the same temperature as the house, and if the Vines are weak through heavy cropping afford a supply of liquid manure, not before moistening the border, but after it is watered sufficiently for healthy growth, the liquid being used rather thick or strong. The manurial elements will displace or mingle with the water previously given, and become available as food by the time the Vines are in leaf, the soil having a strong affinity for the salts of the manure, grasping and retaining them for taking in by the roots as required. A little stable litter should be placed on the outside border to prevent chill, but eschew thick coverings of manure, particularly such as are often left to settle into a soapy mass, giving preference to lumpy, which will afford the needful protection, and admit of the free access of air.

Succession Houses.—Vines allowed to start of their own accord usually do so when the mean external temperature reaches 50°, which occurs in April and May, but those under glass are sooner influenced by

the warmth, and start into growth towards the close of March or early in April when kept cool, fire heat being used to just exclude frost. If the Vines are of the early and midseason varieties they ripen in late August or during September with little assistance from fire heat, and are the cheapest grown, but the produce comes on at a time when other fruits are plentiful and the supplies of Grapes from home and abroad are abundant, hence the prices rule low. It is an excellent method, however, of securing Grapes for home use in the late summer and autumn months. The house must be kept cool, ventilating fully on all favourable occasions, and only using fire heat to exclude frost, even where there are plants, for it is desirable to keep the Vines dormant until April, and then give such assistance from fire heat as the prevalence of spring frosts necessitate. Thus the Vines will have the summer to make their growth and perfect the fruit in.

Late Houses.—Thick-skinned Grapes and late varieties require a long time to grow and perfect the fruit satisfactorily for keeping. Assuming that the Vines are cleared of the Grapes early in January, and the borders have been top-dressed with fresh loam and an approved fertiliser, a good supply of water should be given and a fresh start made without much further delay, so that the Grapes may be thoroughly ripened by the middle of September. Keep any strong rods in a horizontal position or lower, and secure an even break by syringing two or three times a day. Maintain a temperature of 50° to 55° at night and on dull days until the buds move, then allow 5° to 10° more by day and an advance of 10° from sun heat, losing no opportunity of ventilating freely.

The Kitchen Garden.

Seakale.—This delicious vegetable may be secured in quantity now if strong roots are packed closely together with soil between them in a suitably warm place, where the crowns can be covered from light. All the thong-like roots may be cut away when the crowns are lifted, and the best of these preserved for future planting, preparing them of the length of 6 inches, and cutting the top transversely and the base slantingly. Lay them in sand or soil in a cool place until time to plant. In forcing Seakale in quantity a bed in a warm structure should be formed, and the roots planted therein. Keep the soil moist and the temperature about 60°, adopting some means of excluding light, so that the produce may be perfectly blanched. The proper number of roots for forming a successional supply may be introduced every ten days or fortnight. Pots or boxes are good mediums for holding soil and roots, but other receptacles may be inverted over them so as to blanch the growth as it advances.

Rhubarb.—Rhubarb roots force readily now in a temperature of 55° to 60°. It is immaterial whether the crowns are covered or not to exclude light, but usually the best coloured stalks are obtained in semi-darkness, hence it is desirable to invert some receptacle over them during growth, which not only partially blanches but lengthens the stalks. In a moist temperature, too, surrounding the roots with soil is not absolutely necessary, but attention should be given to afford due supplies of water.

Roots in the open ground may also be forced by fermenting manure and leaves. First cover the crowns with pots or boxes having movable tops or lids, then pack closely round with stable manure and leaves in equal proportions, and cover over the pots or boxes to the depth of a foot. Examine the crowns occasionally to see how growth is progressing, accelerating or retarding it by adding or removing fermenting material.

Forcing French Beans.—In a temperature of 65° to 75° dwarf French Beans may be grown readily. Fill 8-inch pots with a rich mixture of loam and manure, or rather fill them three parts full. Sow eight Beans in each pot, accelerating germination by standing them near hot-water pipes; but when growth appears plenty of light is essential, as well as a brisk heat. When the plants are growing freely and filling the pots with roots give a top-dressing of soil, leaving room, however, for liberal supplies of water and liquid manure when the fruits form. Twiggy sticks should be fixed round to support the growth. With regular and frequent attention to their wants they will give profitable supplies. Sow a number of pots successionally.

Peas.—Several rows of early and second early varieties should be sown now on well-prepared rich ground. Chelsea Gem, American Wonder, William I., Stratagem, Duke of Albany, Prince of Wales, and Telephone are good varieties. The rows of dwarf growers may be 2 to 3 feet asunder, while those of taller growth may be 4 to 6 feet apart. Do not waste seed in sowing thickly, but protect from the depredations of birds, which not only nip off the tops of shoots as soon as germination commences, but search the soil for the seed immediately after sowing. The seed may be protected at the latter stage by damping and rolling in red lead. To protect the seedlings after germination use wire protectors over the rows or strands of black cotton immediately over the plants. Successional rows should be sown fortnightly.

Broad Beans.—The white-seeded varieties of Longpod Beans are valuable for early crops, following with a successional crop of Windsor varieties. Place the seed 2 inches deep in wide drills, forming with them a double row. These double rows may be 3 feet apart.

Onions.—Sow Onion seed outdoors when the weather is favourable and the surface soil dry, so that the ground may be made firm. Draw drills a foot apart and half an inch deep. Sow the seed thinly, cover, and make the surface firm.



* All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Painting Hot-water Pipes (W. H.).—An excellent mixture for painting hot-water pipes is lamp black and boiled linseed oil. If mixed thin you can apply it with a brush. A much quicker process is to take a piece of old canvas, as much as a man can conveniently hold in his hand, and dip it into the paint and rub it well into the pipes. This is rather a dirty plan, and some might object to it on that account; but the work can be done quite as well as with a brush; besides, the under sides of the pipes cannot always be reached with a brush.

Eucharis grandiflora (Novice).—Your plants are infested with the "mite" that attacks these plants and which has ruined large numbers throughout the country. Insecticides are sold, which will destroy these pests, others have advised the use of lime water as a remedy; but many have failed to eradicate the "mite" and restore the plants again to health and vigour by any of these methods. If you have in potting selected only the largest bulbs, throwing the smaller ones away, as is frequently done, we advise you to keep the small ones, thoroughly wash them and their roots in a weak solution of Fir tree oil or other insecticide, and then pot them. They may grow vigorously, and do well for some years. When they are once infested it is very difficult to clean them.

Treating Fish and Poultry Offal for Storing (F. Smith).—The best process is to dry the offal, then grind it, and afterwards mix with it a good percentage of kainit, a fourth of the quantity of ground refuse being sometimes employed or even more, which not only makes the manure keep for a longer period, but is a valuable addition to it, on account of the potash and magnesia the kainit contains. Another plan is to use sulphate of lime, about as much as of ground refuse, and thus prevent the escape of ammonia. It is also a good plan to use quicklime with the offal, mixing well and covering the heap with a foot depth of earth. About 5 per cent. of dry, freshly slaked lime should be used, and the mixture may, where it is inconvenient to employ earth, be covered with a thin layer of lime. This mixture, when dry, can be kept without any appreciable change for a long time, though of course the offal will be reduced. Blood may be treated in a similar manner, and then forms an excellent fertiliser.

Service in Public Parks (J. S. R.).—We are afraid your question is too vague to permit of our giving a reply that will be of material value to you. You do not say whether you wish to come to London or whether you aspire to the position of superintendent, or would be content to start at the foot of the ladder and work your way up. For the provincial cities and towns application is usually made to the Town Clerk, but beyond the figures we have seen advertised we have no knowledge of the salaries that are paid; we know, however, that they vary considerably. For the London parks application must be made to the Chief Officer, Parks Department, London County Council, 11, Regent's Street, S.W., but we do not think you could get a start here above the rank of foreman, even if you got that, as the department is now admirably manned. The wages of a gardener commence at 27s. per week, while the superintendent of a first-class park rises to £225 per annum, with free house, annual leave, and one or two allowances. If you wish further information write again; we shall be glad to assist you.

Houses Infested with Eelworm (A Constant Reader).—A grower of Cucumbers, Grapes, and Tomatoes exclusively in houses covering an area of about 35 acres, disinfects the Cucumber and Tomato houses, where the first are grown in troughs about 3 feet wide and 6 inches deep, kept clear of the floor by cross battens, and the latter are grown in pots, with sulphuric acid, a solution of about 5 per cent., or five parts "oil of vitriol" to 100 parts water. After all he has eelworm, and it is introduced in the soil, so that the disinfection is practically of little value, as the eelworms, even the dreaded *Heterodera radicicola*, wriggle themselves out of harm's way, and descending deeper than the solution penetrates, are still present to return and feed and breed on the Cucumbers and Tomatoes, as the case may be, after the acid has been neutralised. Mr. Dyke used a coating of limewash with good effect all over the floor, or at least beds, where the plants had to be grown. Of course boiling water is a complete annihilator of the pest; the difficulty, however, as with acid, is to reach all the pests. Carbolic acid, 1 oz. to a gallon of water, has also been used, but this sterilises the soil for a considerable time, and also gives off vapour very injurious to vegetation, especially under the close system of cultivation. We advise the boiling water method of disinfection, and the free use of lime on the floor or surface of the soil.

Pasture Land and Hay Making (F. Reus).—We do not know of any work especially treating the management of pasture land and hay making. We will give in the "Home Farm" column shortly the conclusions we have drawn from thirty-two years' experience on the subject.

Planting Beech Trees (Planter).—Beech is a useful tree for planting on a limestone stratum, and it does well near the sea. As the season is getting advanced, and March is often a dry, bad planting month, we should defer planting until autumn, having the stations prepared for the trees during the summer, trenching the ground and removing the roots of the trees that have been cut down. This will give the young trees a chance, though the established trees will find out the moved and aerated soil, and fill it quickly with roots. That is the difficulty in getting young trees established near those that already occupy the soil with their roots.

Pear Huyshe's Prince Consort (F. J. B.).—This Pear is thus described in the "Fruit Manual":—"Fruit, very large; oblong, uneven and bossed in its outline. Skin, grass-green, which it frequently retains even when ripe, but becoming sometimes yellowish green; it is thickly covered with large russet dots, which round the stalk are so dense as to form a russet patch. Eye, rather small and open, set in a pretty deep and uneven basin. Stalk, an inch long, stout and woody, inserted in a line with the axis of the fruit in a small cavity. Flesh, yellowish, with a greenish tinge, melting, but not buttery, being rather crisp, very juicy, sweet and vinous, with a very powerful and peculiar flavour unlike any other Pear. A delicious Pear, of first-rate quality; ripe in the end of November. Raised by the Rev. John Huyshe of Clysthydon, Devon, from Beurré d'Aremberg fertilised by Passe Colmar.

Treatment of Strawberries (Amateur).—Remove all weeds from the beds as soon as weather permits, also leaves which have been destroyed by frost, if the plantation has to be kept clean and neat through proximity to the house or otherwise, but for market plantations dead leaves will do no harm. Do not dig among the plants, as this destroys the surface roots, and cannot possibly do any good, but may seriously injure the coming crop. Any vacancies may be filled up if strong plants are obtainable. Ram them in firmly with a wooden rammer, and mulch with short manure. Making new plantations now is not advisable, except in exceptional cases, as they cannot be expected to fruit this season. A crop of early Potatoes, Lettuce, or some similar vegetable should, therefore, be placed on the plot, and planting be deferred until August. Strawberries must have a cool, moist, deep soil to grow them to perfection. They require abundance of water at all times, but especially when ripening their fruit, which time is often the driest and hottest part of the whole year. Any beds that are getting exhausted will be benefited with a good dressing of farmyard manure spread between the rows, and left for the rain to wash into the roots; or a dressing of one part nitrate of soda to five parts superphosphate may be applied a month hence at the rate of a quarter of a pound to the square yard, raking the ground afterwards to facilitate absorption and evenness of distribution.

Sowing Peas Out of Doors (W. White).—When some of the early podding varieties are sown on warm borders or in the open on ground sloping to the south, not later than the middle of February, these will be ready to gather from only a few days later than those over which more trouble has been expended. The small early wrinkled-seeded varieties may be sown thus early on warm borders and in light soil; but the seed is liable to decay in heavy, cold ground, and ought to be kept out till nearer the end of the month. Many of the varieties described as attaining a height of 3 feet, or rather less, not infrequently grow considerably taller, and the rows ought, therefore, to be about 4 feet apart, or otherwise they may overcrowd and spoil each other. The plan of arranging the rows of moderately strong growers about 10 feet apart on a warm border, disposing four rows of either a dwarf variety, Beck's Green Gem Bean, or Cauliflowers between them answers well. Thus arranged the tall Peas crop heavily, and also afford some shelter to the crops between them. Early Peas not branching, or not being required to branch very strongly, it is advisable to sow the seeds rather thickly, one pint being none too much for a drill or drills equal to a length of about 40 feet. If the ground cannot be got into a finely divided state, the best that can be done is to surround the seeds with light sifted soil, burying it in any case a depth of about 2 inches. Should there be any mice in the garden they are certain to find the Peas, it being scarcely possible to deter them from the surface. Damping the seed and well rolling it in powdered red lead prior to sowing is the best preventive measure.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to

separate them when the paper is damp. (S. G.).—1, *Odontoglossum crispum*; 2, *Dendrobium nobile*; 3, *D. phalaenopsis Schröderianum*. (H. D. C.).—1, *Begonia metallica*; 2, *Hedychium Garduerianum*; 3, *Asparagus plumosus nanus*; 4, *A. Sprengeri*; 5, *A. deflexus*; 6, *Davallia canariensis*. (F. S. L.).—1, *Acacia cultriformis*; 2, *Sparmannia africana*; 3, *Bambusa Fortunei*; 4, *Cocculus laurole*. (H. P.).—1, *Ophiopogon japonicus* var. *variegata*; 2, *Zygopetalum crinitum*. Neither plant is of any great value.

Covent Garden Market.—February 13th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, cooking, bush. ...	2	6 to 7	Lemons, case ...	9	0 to 16
" Californian, case ...	7	6 to 9	Oranges, case ...	6	0 to 15
Apricots, Cape, box ...	8	0 to 10	Pears, crate ...	3	0 to 7
Chestnuts, bag, from ...	5	0 to 15	" stewing, case of		
Cobnuts, doz. lb., best ...	4	0 to 5	" 72 to 120 ...	4	6 to 6
Grapes, black ...	0	6 to 2	" Californian, case	15	0 to 18
" Dutch, lb. ...	0	6 to 1	" ½ case ...	9	0 to 10
" white, per lb. ...	1	6 to 5	Pines, St. Michael's, each	1	6 to 4

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	6 to 3	Greens, bush. ...	0	6 to 1
" Jerusalem, sieve ...	1	6 to 0	Herbs, bunch ...	0	2 to 0
Asparagus (Spruce Grass) ...	0	6 to 0	Leeks, bunch ...	0	1 to 0
" English, 100 ...	7	0 to 0	Lettuce, doz. French ...	0	8 to 1
" Giant, bundle ...	15	0 to 20	Mushrooms, forced, lb. ...	0	8 to 0
" Spanish, bundle ...	1	6 to 1	Mustard and Cress, pnt. ...	0	2 to 0
" Paris Green ...	5	0 to 6	Onions, Dutch, bag ...	3	6 to 0
Batavia, doz. ...	1	3 to 1	" English, cwt. ...	5	0 to 0
Beans, French, per lb. ...	0	10 to 0	Parsley, doz. bnchs. ...	2	0 to 3
" Jersey, per lb. ...	1	6 to 2	Potatoes, cwt. ...	3	0 to 7
Beet, red, doz. ...	0	6 to 0	Radishes, doz. ...	1	0 to 1
Broccoli, bush. ...	0	6 to 1	Rhubarb, doz. ...	1	2 to 1
Brussels Sprouts, sieve ...	1	0 to 2	Savoy, tally ...	4	0 to 5
Cabbages, tally ...	3	0 to 5	Scotch Kale, per bushel ...	0	6 to 1
Carrots, doz. bnch. ...	2	0 to 3	Seakale, best, doz. ...	12	0 to 0
Cauliflowers, doz. ...	1	6 to 3	" 2nd, doz. ...	6	0 to 8
Celery, bundle ...	1	0 to 1	Shallots, lb. ...	0	2 to 0
Chicory, Belgian, lb. ...	0	4 to 0	Spinach, bush. ...	2	6 to 3
Corn Salad, strike ...	1	0 to 1	Turnips, doz. ...	2	0 to 3
Cucumbers, doz. ...	12	0 to 18	Turnip tops ...	0	9 to 1
Endive, doz. ...	1	6 to 0	Watercress, doz. ...	0	8 to 0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Asparagus, Fern, bunch ...	1	6 to 2	Lilac, white, bunch, ...	3	0 to 5
Carnations, 12 blooms ...	2	6 to 3	Lily of the Valley, 12 bun.	8	0 to 15
Cattleyas, doz. ...	10	0 to 18	Maidenhair Fern, dozen		
Chrysanthemums, dozen			bunches ...	4	0 to 8
blooms ...	1	0 to 3	Marguerites, doz. bnchs.	2	0 to 4
Daffodils, doz. ...	12	0 to 15	" Yellow, doz. bnchs.	2	0 to 4
Eucharis, doz. ...	4	0 to 6	Mimosas, bnch. ...	1	0 to 1
Gardenias, doz. ...	3	0 to 5	Odontoglossums ...	6	0 to 8
Geranium, scarlet, doz.			Poinsettias, doz. blooms.	8	0 to 12
bunches ...	8	0 to 12	Roses (indoor), doz. ...	2	0 to 4
Hyacinths, doz. ...	4	0 to 8	" Safrano, doz. ...	1	6 to 2
Lilium lancifolium album	3	0 to 5	" Tea, white, doz. ...	1	0 to 3
" rubrum	3	0 to 5	" Yellow, doz. (Perles)	2	0 to 4
" various ...	4	0 to 8	Smilax, bunch ...	3	0 to 5

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acers, doz. ...	12	0 to 24	Foliage plants, var., each	1	0 to 5
Arbor Vitæ, var., doz. ...	6	0 to 36	Geraniums, scarlet, doz.	6	0 to 10
Aspidistra, doz. ...	18	0 to 36	" pink, doz. ...	8	0 to 10
Aspidistra, specimen ...	15	0 to 20	Hydrangeas, white, each	2	6 to 5
Azaleas, various, each ...	2	6 to 5	" pink, doz. ...	12	0 to 15
Boronias, doz. ...	20	0 to 24	" paniculata, each	1	0 to 3
Cannas, doz. ...	18	0 to 0	Lilium Harrisii, doz. ...	8	0 to 18
Crotons, doz. ...	18	0 to 30	Lycopodiums, doz. ...	3	0 to 6
Dracæna, var., doz. ...	12	0 to 30	Marguerite Daisy, doz. ...	8	0 to 10
Dracæna, viridis, doz. ...	9	0 to 18	Mignonette, doz. ...	8	0 to 12
Erica, various, doz. ...	8	0 to 18	Myrtles, doz. ...	6	0 to 9
Enonymus, var., doz. ...	6	0 to 18	Palms, in var., each ...	1	0 to 15
Evergreens, var., doz. ...	4	0 to 18	" specimens ...	21	0 to 63
Ferns, var., doz. ...	4	0 to 18	Roses, doz. ...	6	0 to 18
" small, 100 ...	4	0 to 8	Stocks, doz. ...	8	0 to 12
Ficus elastica, each ...	1	6 to 7			

Trade Catalogues Received.

W. Atlee Burpee & Co., Philadelphia.—*Farm Annual*.
A. Cross & Son, Ltd., Hope Street, Glasgow.—*Seeds*.
Dobie & Mason, Oak Street, Manchester.—*Seeds*.
J. Forbes, Hawick.—*Florists' Flowers*.
Harrison & Son, Leicester.—*Seeds*.
J. Lambert & Son, Trier, Rheinprovinz.—*Seeds*.
R. Pringle, Belvoir Street, Leicester.—*Seeds*.
J. Russell, Richmond, Surrey.—*Seeds*.
Sutton & Sons, Reading.—*Farmers' Year Book*.
E. Webb & Sons, Stourbridge.—*Farm Seeds*.

Gardeners' Charitable and Provident Institutions.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.



Manures—What to Buy.

THE retailer of artificial fertilisers is beginning to make himself obtrusive at the country markets, and reminds us of the very patent fact that in a few weeks a considerable quantity of his wares will be needed both for grain and root crops. A great deal of manure that is put on the market is retailed at prices far above its value, though there is now little of the almost worthless rubbish which was so common twenty years ago.

The spread of scientific knowledge amongst farmers and the cheapening of facilities for the analysing of purchased manures have almost driven these cheap and nasty mixtures off the market. But there is still a tendency for farmers, especially the less literate amongst them, to spend their money on mixtures with high-sounding names and with too great a faith in the persuasive eloquence of the salesman who purveys them.

One reason why so many farmers buy mixtures is that they do not care for the trouble of mixing, and perhaps are also a little hazy as to what they ought to mix. They are also strongly imbued with an idea, very naturally fostered by the merchant, that he can mix the manures more effectually and at less cost than they can. That is so, and many up-to-date farmers are now buying their manures in their several integral forms and having them mixed by the manufacturer or merchant just before delivery. This is a very different thing from buying the manure as a mixture, and with no guarantee as to the nature of its component parts. A charge is made for the mixing, but it is a trifling one and very small by comparison with the profit taken by the manufacturer out of the patent manures which he has found the brains to devise.

Another strong argument in favour of farmers purchasing their own mixtures is the exceedingly great variety of soils which are met with, as also is the difference in their various states of fertility. A farmer should know better than any manure merchant what his own land requires, and should be able to write his own prescriptions for the merchant to make up. What he requires in larger or smaller proportions are nitrogen, phosphate of lime, and potash. These are practically the only useful constituents of manures, and they are found in all mixtures that are of any value for the growth of plant life.

Commercially nitrate of soda and sulphate of ammonia are the two available forms of nitrogen. Nitrate of potash is too dear, muriate of ammonia is not a desirable form, as we believe it to be deleterious to crops, and the nitrogen present in bones is both expensive and small in quantity. Phosphate of lime is chiefly derived from superphosphate, which is made by dissolving coprolites or "Spanish Rock." Basic slag also provides a cheap form of phosphate of lime, but one not so readily available as plant food as the superphosphate is. Another form is "Indian bonemeal." This, after being steamed and the glue extracted, contains about 60 per cent. of phosphate in a rather insoluble form, but is not dear at its present price—viz., £4 5s. per ton, or less than 1s. 6d. per unit of the phosphate present, for this manure also contains about 1½ per cent. of ammonia, which at nitrogen price is worth about 10s., so bringing the phosphate alone down to 1s. 3d. per unit. The phosphate in basic slag is worth 1s. per unit, whilst that in superphosphate is now worth on the market nearly 2s. The question, which of these different forms of phosphate to use, is one that annually agitates thousands of agricultural minds.

There is no doubt—in fact, in the face of results of so many trials it cannot be denied that superphosphate is the most effectual for temporary purposes—i.e., for one crop only, and this rule applies more

especially to Turnips, and on all classes of soils. But there are after-considerations to take into account. There is the following crop of corn, and more important still the Clover which succeeds it, and for the well-being of which an ample supply of readily available phosphate of lime is absolutely necessary.

We have had exceptional experience of the continuous and exclusive use of superphosphate in large quantities. The Turnip crop was uniformly good; we cannot call to mind a real failure, and only one unsatisfactory crop; but the Clovers were very seldom as good as was desired. There was a great tendency to lose root in winter, and owing to the difficulty in obtaining a good pasture of Clover it gradually became the custom on the farm we are referring to to include a very large proportion of Rye Grass in the seed mixture. In course of time there was a change in the management, and there being an impression that superphosphate had been overdone, for the next eight or ten years steamed bonemeal was used—not altogether, but to a considerable extent, in its place. The Turnips were no better, though they were apparently on the average no worse, but there was a very marked improvement both in the grain crops and the Clovers.

The Barleys, which previously had been abundant as to straw, but liable to lodge in wet weather and ripen prematurely in drought, became much healthier in habit, better in quality, and more satisfactory as to yield, whilst the very marked improvement in the sheep pastures naturally brought about a corresponding advance in the Wheat or Oat crops which followed. We have related this from our own experience to show that super, good as it is for Turnips, may be overdone.

Basic slag was used on the same farm with little or no effect whatever, but we have seen very markedly favourable results from the use of 10 cwt. of basic on black peaty soil of a somewhat sour character; the effect on Turnips and Rape was very satisfactory, but even more so on the grain crops. Super on land like this would do well for the roots but not so well for the corn, whilst bonemeal would be of little benefit to either.

No doubt dissolved bones applied in similar quantity would do as well as bonemeal, but dissolved bones are so much more expensive that we think there is no question which should be preferred. We have ourselves seen splendid results from the use of bonemeal as a top-dressing for fruit trees, and we are convinced that on most soils and for all crops bonemeal is the safest and most satisfactory, if not quite the cheapest, of the forms in which phosphate of lime may be procured.

We have more to say on this subject, but we will defer our further remarks until another week.

Work on the Home Farm.

Again have we spent a week with practically little progress to show for the time. We have had a mixture of samples of real British weather, ringing the changes between frost and snow, sunshine and rain, in a manner almost bewildering.

Work on the land has been nil, for it would be madness either to plough or do anything else with the soil in its present condition. There has never been enough frost to make the ground hard, so the carting together of road scrapings and similar refuse into a compost heap and the spreading of compost on grass has been easy to accomplish, and has redeemed the week from absolute inutility as regards horse labour.

Winnowing Barley has found some occupation for the men when they were not able to get to their hedging work. The Barley trade goes from bad to worse; the pure beer agitation seems to have no stimulating effect whatever on the markets, and if brewers do not turn greater attention to the consumption of malt just now they will most certainly not do so in the future.

Sheep have again been in a dreadful mess, and the ewes have been entirely on grass, and have had Turnips brought to them. They will hardly get back on Turnips now unless the weather changes quickly, for lambing time will be here in a fortnight, and we like ewes to have Mangold on grass for a week before that time comes. As, however, Turnips are so plentiful, and the Mangold will keep and may come in very useful if we should have a dry summer, it may be advisable to keep the flock on Turnips two or three weeks longer than usual—i.e., if weather will allow. Ewes will lamb satisfactorily on Turnips if the latter are sound and good, and the lair fairly dry. A walk to and from the field and the lambing yard does more good than harm; three-quarters of a mile twice a day will hurt none that are healthy, and the others will be better left in the yard. Hurdles for making the necessary pens should be thatched at once and stacked ready for use.

Pigs and pork are scarcer than ever. Several pigs of the porket size are losing the use of their limbs, and have to be slaughtered to save their bacon. Knowing people attribute this to overfeeding followed by a chill. Most of them have broken down just after being purchased and removed, which lends colour to that idea. As they are all in good killable condition the knife is evidently the best medicine. Notwithstanding the winterly weather there has been little movement amongst Potatoes, which is a boon to the workwomen, who have a rough time amongst Potatoes in stormy weather.

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Journal of Horticulture.

THURSDAY, FEBRUARY 21, 1901.

The Dahlia.

A Flower of the Nineteenth Century.



THE Dahlia is one of the few flowering plants that has retained an unbroken popularity since its introduction, or, to speak more correctly, since its final introduction; for neither the first nor second attempts to colonise it in English gardens succeeded. The year 1789 witnessed its first appearance in England, when it would seem to have collapsed under a treatment suited only to tropical plants. Again, in 1802, a plant of *D. coccinea* was secured by Fraser of Chelsea from Paris, which when it flowered was laid under contribution by Curtis for the figure inserted in the "Botanical Magazine." Next year Woodford of Vauxhall imported the variety *rosea*, but this, as well as Fraser's plant, died "without issue."

Seeds sent by Lady Holliand from Madrid in 1804 to her gardener, Buonainti, had under his care a better success. They were received on May 20th, and a portion sown without delay. One plant produced bloom in September, and this Andrews depicted in the "Botanical Repository" as *Dahlia pinnata*. With the exception of some seeds given to Mr. Salisbury the remainder were sown at Holland House in 1805, and these, with the plants raised the preceding year, went far to show the exceeding variability of the new plant. Every one was diverse from the other, and two partly double, the first of the race, were also secured. Of this batch Sydenham Edwards portrayed two, a purple and a yellow, which appeared the spring succeeding in "The Gardeners' Dictionary." Salisbury sowed his seeds also in 1805, and from flowers produced from the resulting plants two were figured by Hooker in the "Paradisus Londinensis."

Buonainti was fortunate not only in introducing the Dahlia to cultivation, but he also



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proved the plant to be almost hardy, first, by flowering it on plants grown in the open garden, and then by means of a root that had inadvertently been left in a border, and which, passing the winter unharmed, sprouted and grew the year ensuing. Salisbury, on his part, showed that Continental botanists had too hastily assumed that mere varieties were species, and reduced those that had flowered to two species only. In France an ardent florist, Count Lelieur, almost exactly one hundred years ago, commenced improvements, and even while Europe was being convulsed with war appears to have persistently continued the work. In 1814, some of the Continental varieties having been introduced to England, the culture of the plant was at once undertaken with great enthusiasm.

It would appear from Hogg, 1820, that the practice of raising plants from seeds prevailed at that date, but they were also propagated by means of cuttings and tubers. The latter were also potted, started early into growth, and planted out to produce an advance crop of flowers. For many years the extreme height of the plants, from 9 to 12 feet, was a great drawback, but shortly dwaiſer, though still tall, varieties were introduced; and in any case a tall habit seems not to have prejudiced their popularity, for a few years later we find Lee of Hammersmith offering 200 varieties for sale. Up to about 1830 Latin names were not uncommonly used to distinguish varieties, as, for instance, Lee's *atracta*, *anemoneflora*, *densa*, *priscientissima*, *coccinea*, and *speciosissima*. But it was impossible that the Latin language could supply names for the overwhelming crowd of varieties that annually made a bid, if not for fame, at least for a place in the garden, and so the more sober designations of Morning Star, Man of Kent, and Queen of Roses came into use.

The rate of supply at this period may be estimated from the fact that 180 new English varieties were offered in the spring of 1835, and the popularity of the flower is gauged by the prices charged. Of these 101 sorts were catalogued at 5s. each, fifty-six at 7s. 6d., and twenty-one at 10s. A few years later half a guinea was the standard price for a novelty, and at this figure new varieties continued to be sold for some thirty years, when prices declined somewhat. To understand how so large a number of varieties could possibly find buyers in one year, it is necessary to explain that up till about this date there was no criterion of what the florists wanted in the Dahlia, and it was just then that what was termed the cup-shaped floret began to appear, and which became the type that florists gave the preference to. The forms that were discarded consisted mainly of the Anemone-flowered, the China Aster-flowered, and the Globe-flowered sections. Size and colour in these appear to have been the points mostly looked for. Wilmot's *superba*, for example, having been 9 inches across.

The first exhibition of Dahlias was held, curiously enough in Billingsgate, in 1832, a silver cup having been offered for twelve blooms. The Metropolitan Society of Florists then took up the flower, and furnished rules by which the blooms were to be judged. Shows all over the country became shortly the fashion, from four to 100 blooms being the number staged for prizes. At the very beginning of the exhibition era a practice crept in of removing the hard centres from blooms otherwise good, and replacing them with perfect florets. This was sometimes so skilfully effected as to escape detection, but as a rule it resulted in much ill feeling, because societies were not so keen in meting out punishment to detected offenders as honest exhibitors considered they ought to have been. Very early, too, a point in judging was noted that still merits attention. It happened then as it does now, that a very fine bloom with the older florets past was pitted against a fresher bloom, but with a hard centre. It was clearly stated that the former must be allowed to be the better bloom, though at the time imperfect, whereas the other under no circumstances could be considered as other than inferior. "Fancies," though not classed separately from "Shows," were early in existence, not only in the striped and spotted forms, but as early as 1827 Levick raised a variety, crimson with clearly marked white tips, the first of this type. It caused much excitement, not only on account of its novelty but also because of its uncertainty and its tendency to revert to a crimson self. The variety was named incomparable, and

during many years occupied a high position as an exhibition flower; when in good form being unique among its compeers.

It is rather curious that the single forms raised early in the century were preserved in gardens here and there, and that it was from these that the craze for single varieties which originated twenty years ago was fed with material. The Cactus forms which first appeared about the same time are so common as to require no comment. It is right to state that the Dahlia from the very first was admitted into the flower garden, and all along the plant has been more or less effectively employed as a stately flower of autumn, its value in masses having been appreciated long ago. For bedding purposes a class with small flowers and a dwarf habit of growth was specially cultivated, and used mostly to furnish the back lines in broad ribbon borders. Good forms of these were *Zelinda*, purple; *Little Wonder*, scarlet; and *alba floribunda*, white. The Pompon varieties introduced from Germany about thirty-five years ago, and latterly "Glare of the Garden," seem to have completely routed these out of gardens.

Now, when many gardeners and amateurs are thinking of starting, their stock of tubers to produce cuttings, it may be not uninteresting to note that the practice of planting the tubers in April is a very old one, and for ordinary garden purposes still the best method of culture, and specially to be commended on account of the labour and time saved as compared with the usual practice.—R. P. BROTHERSTON.

Sprekelia formosissima.

THE *Jacobæa* Lily is a bulbous plant with curiously shaped and rich scarlet flowers, and like many other members of the *Amaryllis* family may be had in flower all through the winter months, and is therefore extremely useful. It is usually catalogued as *Amaryllis formosissima*, but its correct name is *Sprekelia formosissima*, and it hails from Mexico. It is certainly to be regretted that the beautiful flowers fade so quickly, but although they only last from four to six days they are nevertheless useful where choice flowers are required for cutting, or for the decoration of greenhouses throughout the winter.

Established bulbs will expand their flowers in from four to six weeks after starting in a temperature of 65° to 70°, but as soon as the flowers are open the plants should be removed into a cooler house. They may be grown singly in 5-inch pots, but as each bulb only throws up a one-flowered scape it is better to place about five bulbs in a 7-inch pot, especially if required for decorative purposes in a large house, or even for cutting. The flowers usually appear with the leaves, and, like all *Amaryllises*, they are best when established and the pots are full of roots; indeed, they should be forced gently the first year they are potted, and, with an eye to future usefulness, they must be well cared for after flowering.

This is where many people fail with bulbous plants. As soon as the flowers have faded, and this is generally at an early stage of the plant's growth for the season, they are thrown aside and neglected. It is known, alas! too well that it is impossible to do justice to the host of dissimilar plants during the forcing season; but this does not alter the fact that unless the embryo flower be formed in the bulb before the leaves die, forcing or even natural growth, so far as flowers are concerned, will be a disappointment the next year.

A good compost may consist of three parts of loam and one part each of leaf mould and sand, but they will only require potting every second or third year, and if the surface soil is removed every season before starting the bulbs and fresh compost supplied, also all suckers removed and the drainage kept free, they will flower for years without being potted. After flowering keep the plants well exposed to the sun until growth is completed, then gradually withhold water, and finally dry them off and rest them for at least three months.—F.

*Cœlogyne cristata.*

Cœlogyne cristata is a very easily cultivated Orchid, free-flowering and of great beauty. It should be placed in pans of peat fibre and sphagnum, with a third of good leaf mould if this is at hand. Frequent disturbance tends to make the plants weak and unhealthy, consequently let the work be well done at first, and thorough drainage provided, so that for a few years at any rate surface dressings may take the place of repotting. *C. cristata* likes a cool, moist house, and must be grown in a shady position.

Growth usually commences about February or March, and goes on until the pseudo-bulbs are completed. It should always have plenty of moisture, and it is the greatest mistake to allow the pseudo-bulbs to shrivel in winter, this weakening the plants with no corresponding benefit. It rests during the winter months, the season varying a little according as the variety is a late or an early flowering one. The worst insect pest is a small brown scale, and this should be kept under from the first, for if the plants are once overrun with it their continued health is out of the question. Frequent dews of tepid water are an advantage in hot weather. A splendidly grown specimen of *Cœlogyne cristata* is shown in the illustration on page 151.

Odontoglossum Loochristiense
Rochfordianum.

The number of varieties of *Odontoglossum Loochristiense* is increasing apace, and each season brings forward fresh and frequently improved forms. One of the finest is *O. L. Rochfordianum*, of which we give an illustration. It was exhibited at the meeting of the Royal Horticultural Society held on the 12th inst., and was so much approved by the experts of the Orchid Committee that they recommended a first-class certificate. The flower is of perfect shape and substance, while the markings are superb. The sepals and petals are rich yellow with a central patch of white; the spots and blotches are chocolate brown. The lip is of similar shade, with a large maroon crimson patch. The fortunate owner is Mr. Thos. Rochford, Broxbourne, Herts.

Stanhopea grandiflora.

Stanhopea grandiflora should be cultivated in rather large but shallow wire or wood baskets, the reason for keeping them shallow being that the spikes of flower are in all cases pushed downwards, not upwards, as is usual. For compost use three parts of sphagnum moss to one of good fibrous loam, and mix with this plenty of rough crocks and charcoal. This species is rather erratic in its seasons of growth and rest, but as a rule the summer is the most active time. During this time if the plants are well established and rooting freely a very free water supply is necessary.

After the growth is complete less is necessary, but no drying off should be practised. At all times a liberal amount of heat is required, but this must be tempered with plenty of atmospheric moisture, otherwise the plant will become overrun with red spider. Frequent washings with tepid water from the syringe is also of great assistance in keeping down this pest and the plant in health, but of course it must not be practised in dull or wet weather, or when very cold. The best position for the plants is suspended from the roof in the East Indian house.

Planting Peaches and Nectarines.

THE best stock on which to cultivate the Peach and Nectarine is undoubtedly the Plum stock. The great majority of trees grown both in the open garden, on walls, and on trellises under glass, are established on this well proved stock, which possesses the great advantage over many other stocks of being surface rooting. Roots produced near the surface are more likely to be of a fibrous character, and to continue so, thus insuring a sufficiently vigorous yet fruitful condition, provided the soil is good and fertile. The compost for Peaches and Nectarines should be an open calcareous loam, and ought to contain a due proportion of mineral elements, these consisting of lime, potash, magnesia, and phosphoric acid. Very light loam is usually deficient in potash, therefore in selecting the loam that of an adhesive character is best. The top 6 inches of an old pasture may be brought together and mixed with charred refuse and wood ashes, adding thereto some crushed bones, which will provide phosphoric acid. The gritty matter in the soil, consisting of small stones, may be retained, as they have an excellent mechanical effect in maintaining the porosity of the soil. To a properly fertile soil the addition of manure is not desirable, for soil enriched in this way promotes soot, long, vigorous, ill-ripened growths. Light soil, such as sandy loam, may have the addition of dried and pounded clay to improve it.

The size of border for outdoor Peaches and Nectarines should be 6 feet in front of a wall 12 feet high.

Where the wall may be lower or higher give half the width for the border that the wall is high. Excavate the soil to the depth of 3 feet, inclining the base to the front, where a trench 6 inches deeper than the base of the border may be taken out for the purpose of laying a 3-inch tile drain, which must have an outlet at some suitable position, giving the drain a proper fall to that point. The drainage of the base of border should next be attended to. Place on this 9 inches of rubble, consisting of stones of various sizes, finishing with smaller stones or gravel, or preferably mortar rubbish free from small pieces of wood. Cover the drainage with a layer of turves, grass side downwards. As the soil is prepared for the border it should be kept dry, so that when it is introduced into position it can be made firm.

The best form of tree for planting is the fan-trained, which may be placed 15 feet apart on walls 12 feet high. The trees should be two or three years old, moderately vigorous, and well ripened, and when planting are best in a dormant condition. The best time to plant is autumn, but still

spring planting may be ventured upon. According to the space the roots will occupy take out a shallow space of good width. Have some fine soil at hand. Do not uncover the roots longer than necessary, as the winds dry them so soon. Prune away all injured parts to firm portions. Place the bole of tree 5 inches from wall, and spread out the roots to their full extent, arranging them in layers, covering each layer of roots with fine soil spread over them from the stem outwards, making as firm as possible. The uppermost layer should not be less than 2 inches below the surface. When the planting is completed secure the branches to the wall temporarily, giving the tree room and time to settle before permanently securing the shoots in position. The soil over the roots should be mulched with a layer of light litter as far as they extend. Some pruning is necessary, but this may be done when the new shoots commence to push freely.

In training fan-trained Peaches and Nectarines the main branches must be widely disposed. If possible, train all the bearing shoots on the upper side, arranging them in a regular manner, and not too crowded. During the first season or two attention must be frequently given during active growth to prevent any growths taking an undue lead and so weakening other legitimate shoots. During dry, hot weather, afford water to the roots, and frequently syringe to prevent attacks of insects and encourage growth. As the shoots extend in summer train them in to the wall and secure in position, as by this means the wood becomes well ripened, and the reduction or removal of superfluous shoots is readily carried out.—E. D. S.

*ODONTOGLOSSUM LOOCHRISTIENSE ROCHFORDIANUM.*

Certificated Plants.—No. 6.

WHILE the *Celosia* in its crested form as the Cockscomb has decidedly declined in popular estimation, being seen only occasionally at exhibitions, the genus *Cheiranthus*, as represented by the common Wallflower, has been subjected to considerable improvement, though Mr. F. J. Graham and his *Yellow Perfection*, which received a commendation as far back as 1863, are nearly forgotten. As a garden and market flower the Wallflower is indispensable. A subject so powerfully fragrant will always be a favourite in gardens. A very interesting hybrid obtained by the Rev. Harpur Crewe, and bearing his name, of slender growth, and carrying plentiful spikes of pale yellow double flowers, though obtained in the early seventies, and which became widely distributed, did not gain an award from the Floral Committee until 1896, so long a time does it sometimes take for a plant to reveal itself in its best form. This is a variety which, being sterile, has to be increased by means of cuttings. We have now maroon, yellow, purple, sulphur, and other shades of colour in Wallflowers, and in spring they are the pride and glory of our gardens.

Double German Wallflowers—Cosmos.

The double German Wallflowers are now rarely seen, and yet among them there are varieties well worthy a place in every garden, especially those which may be regarded as English selections. *Colchicum autumnale flore-pleno* obtained an award thirty years ago, because the act of doubling gave a greater surface of colouration, and rendered the blossoms more durable. One rarely sees the pretty trailing *Convolvulus mauritanicus* now, though it is one of the most charming of basket and vase plants; it was commended as far back as 1861. It is cause for wonder that the varieties of the Mexican *Cosmos bipinnatus* are not more grown for cutting. They bear a family resemblance to the *Dahlia*, and flower about the same time. The American florists pay more attention to this genus than we do, and some very pretty varieties have been obtained by them. Such forms as *grandiflorus* and *parviflorus* have obtained awards with us, but later introductions eclipse these.

Notwithstanding the many introductions of new varieties of Vernal Crocus, only one—King of the Blues—has received an award. With this may be associated the autumn-flowering *Sternbergias*. *S. macrantha* or *latifolia*, and the smaller form *lutea* do well in a fairly light soil with which some lime rubbish has been mixed; the best position is within the partial shade of trees. They have large Crocus-like blossoms.

The Cyclamen.

The past half-century has witnessed a marvellous change, both in the culture and improvement of *Cyclamen persicum*. During the seventies the Cyclamen became greatly improved by means of seed, and instead of being regarded as a flower in season in March, improved methods of culture demonstrated that it can be had in bloom in October and all through the winter. A large-flowered strain has been evolved, and to something like three dozen varieties, small and large-flowered, certificates of merit have been awarded. Though varieties are still named, the Floral Committee of the R.H.S. now prefer to distinguish strains, so numerous and good are the varieties. The latest development is that known as the Butterfly section (*papilio*) in which the petals are curiously crested and feathered. A tendency to doubleness has also been observed. The varieties of *C. Coum* and *C. europæum* have undergone change, and some new species, such as the winter-blooming *C. libanoticum*, have been obtained.

Certificated Chrysanthemums.

It is a curious fact that the recently published list of awards issued by the Royal Horticultural Society does not contain the name of any Chrysanthemum as having obtained an award from the Floral Committee previous to 1887. There must be lapses in the record from some cause or the other, though it is represented as being inclusive—1859-1899—because in 1868 the Floral Committee of that day made awards of certificates of merit to new Japanese varieties raised from seeds either sent home by Robert Fortune or from the plants he despatched to this country in 1862.

Among the first sent to England were *Bronze Dragon*, *Grandiflorum*, *Laciniatum*, *Yellow Dragon*, and a few others. Some of the earliest to follow these (and they were either imported varieties or seedlings) were *Baronne de Prailly*, *La Coquette*, *Madame Godellet*, *Nagaski Violet*, *Prince Satsuma*, *Striatum*, *The Damio*, and others. In 1867 the late Mr. John Salter had succeeded in raising seedlings, and the following season he exhibited at the meeting of the Royal Horticultural Society such early improved forms as *Dr. Masters*, *Hero of Magdala*, *James Salter*, and others. There is no available record I am acquainted with issued by the society of any certificate being granted until 1872, when the well known *Elaine* was so distinguished, followed by *Duchess of Edinburgh*, *Fulton*, *Gold Thread*, *M. Crousse*,

M. Lemoine, and *The Cossack* in the seventies; all through the decade commencing with 1881 awards were frequent, but the next decade witnessed a great many more.

We have witnessed a marvellous development in the Japanese varieties, and at the beginning of the twentieth century the rush of new varieties is greater than ever. What the development of the Japanese Chrysanthemum will be during the next ten years we can only imagine; but its culture has called into existence at home, in our colonies and abroad, a large number of societies formed for the purpose of encouraging the culture and exhibition of the Chrysanthemum. The Japanese section has been classified and divided into sections; the spidery and plumed forms have been added during the past few years as their development occurred, of course later in time than that of the Anemone-flowered and single types.

The incurved, reflexed, and Anemone-flowered types of the Chrysanthemum are of older date, but it was not until the National Chrysanthemum Society took in hand the task of classification that any serious attempt was made in this direction. The first English seedlings were raised in Norfolk about 1835, and some were obtained in Jersey in the following year. While the late Mr. John Salter was at Versailles, France, from 1838 to 1848, he found himself in a climate better suited to saving seed than in this country, and he obtained some fine varieties, among them the well-known *Queen of England*.

It was during the forties that the Chrysanthemum was first exhibited. In 1846 Mr. Fortune brought from China two forms of the *Chusan Daisy* or *Chinese Minimum*, and from these have originated the numerous sections of Pompon varieties. The French florists in particular were active in the improvement of the type. An Anemone-flowered form was also developed, and some of them are very elegant and attractive. Single Chrysanthemums have been rapidly developed; while the Japanese section, the varieties of which when first introduced were tall in growth and late in flowering, have given us a race of dwarf growth, blooming abundantly in September and October. Seeing that during the past thirty years something like 300 varieties have received awards it is evident that the Chrysanthemum has been improved in numbers beyond any other popular flower.

The Cineraria.

The Cineraria has also undergone great change; fifty years ago the individual blooms were small, and the habit of growth tall. Then came, principally during the fifties and sixties, a time of great activity in the improvement of the flower, until at the opening of a new century we find in cultivation strains of singularly dwarf growth, bearing flowers of enormous dimensions. The naming of varieties ceased twenty years ago, and highly developed strains, as judged by present-day developments, are generally very fine. But, as if in protest against the large and ungainly blooms now so popular, the species *C. cruenta* has been again taken in hand, and the small-flowered seedlings, being remarkably profuse in blooming, are being much grown for greenhouse decoration. Increased size appears certain to come as a result of selecting the most approved seed parents. Very fine double strains have been secured, but they are scarcely popular, as they can be increased only by division or cuttings.—R. DEAN.

Melons.

(Concluded from page 111.)

SOME garden calendars of the present day recommend that the flowers should not be fertilised before a sufficient number are out at the same time to form a crop. I think it makes little difference when they are fertilised. I make it a rule to pollinise the first female flower that opens, and continue to do so as they open; and I find no difficulty in the plants setting a good crop which swells off freely and ripens satisfactorily. If more fruits set than the plants can support—which is often the case—they swell for a little, then turn yellow, and are cut off, but this does not interfere with the crop in the least. The plants on an average mature from six to eight large fruits each the first crop; and I have had strong healthy plants ripen as many as nine fruits the second crop, well finished fruits, from 4 lbs. to 6 lbs. each, which some judges of Melons consider large enough.

When the fruits have grown to the size of Coconuts they are supported from the trellis by pieces of flat wooden boards, 5 inches square, with holes in the centre, which allow any water that collects on them after the plants are syringed to run off. The boards have a piece of strong copper wire fastened at each corner, and when the fruit is placed on them the wires are secured to the trellis in a position that enables the fruit to swell away without coming in contact with it. This system of supporting the fruits has the great advantage of allowing them to be easily lowered or raised as occasion requires without giving much trouble. During the time the fruits are swelling the plants are liberally supplied with artificial manures,

and liquid manure from the cow house. Thomson's manure and Clay's fertiliser are spread on the surface of the border in a dry state and watered in, and the liquid manure from the cow house is diluted with water. The borders are lightly top-dressed with sifted loam and leaf mould two or three times during the season to cover the young tender roots which mat the surface and are exposed to too much light and air. The plants are gently syringed once a day—early in the afternoon when the houses are shut up—but the paths in hot weather are damped down several times during the day, and a moist growing atmosphere maintained, which accelerates the swelling of the fruits and keeps the foliage clean and healthy. Plants treated in this way are seldom injured by red spider or other insects. Whenever any

after a fruit has grown to a certain stage—some weeks before it ripens—it does not absorb much nutriment from the plant, and I have often had plants set a second crop of fruit before the first was all ripened. Directly after the crop has been gathered the plants are gone over and the useless growths cut out, the borders top-dressed, and the house kept a little closer, and the atmosphere a little moister than it was when the fruit was ripening to encourage new growth. In a short time the plants respond to this treatment, and produce healthy growths with plenty of female flowers, which set much better than they did in the early part of the season. The plants receive the same treatment as that described for the first crop, and by careful attention the foliage is kept clean and healthy till the last fruit has been thoroughly ripened.



CŒLOGYNE CRISTATA. (See page 149.)

of the leaves have finished their functions and assumed a yellow colour they are cut off close to the stem, or branch, with a sharp knife, and a pinch of slacked lime put on the wound, which dries up immediately. When thinning out superfluous branches they are treated in the same way to prevent bleeding.

As the fruits advance towards maturity the atmosphere is kept drier and more buoyant, but the plants are watered at the root the same as before, and the borders are never allowed to approach to dryness. If the weather is warm and genial at this time a little air is left on the house during the night, which thickens and strengthens the foliage and invigorates the whole plant.

With strong, healthy plants there is no difficulty in getting them to produce a second crop, and in much less time than would be the case if young plants were employed. I find from experience that

The names of the varieties of Melons that have been cultivated since I can remember are legion, and still they go on increasing. New varieties, with first-class certificates from the Royal Horticultural Society, are sent out every year by our enterprising seedsmen, but very few indeed of the Melons that were in vogue forty or fifty years ago are grown now.

It is some twenty years since Mr. Crump of Madresfield Court, raised Blenheim Orange Melon, and, in my opinion, it is the best scarlet fleshed variety in cultivation at the present time. And for a white fleshed Melon Carter's Holborn Favourite has few equals. The plant is strong and vigorous, a free setter and a sure bearer. The fruit is of the largest size, sweet, melting, and juicy, and finely netted.

Little & Ballantyne's Golden Orange does not seem to be so well known in the south as it should be. It is one of the most handsome

white fleshed Melons in cultivation. Fruit large, oval shape; skin a bright yellow colour, and beautifully netted; flesh juicy and of excellent flavour. Eastnor Castle is one of the best flavoured green fleshed Melons in commerce, but there is some difficulty now in getting seeds of the true strain.

I have thus endeavoured to fulfil the task of showing the progress that has been made in the culture and development of the Melon during the professional lifetime of a single individual. I may not have said much that is new—it were, indeed, almost impossible to do so in these times of widely diffused knowledge. But I hope I may have been able to some extent to succeed in the object I had set before me of setting forth, with some measure of clearness and accuracy, the past and the present; and the methods by which, under the guidance of science and experience, I have had some degree of success in the cultivation of a favourite home-grown table fruit.—(*Paper read by Mr. A. PETTIGREW before the Royal Horticultural Society.*)

Seasonable Work in Plant Houses.

(Continued from page 110.)

DURING the next month or six weeks potting will claim a large share of attention, and the performance of the work is greatly facilitated by preparing at the outset a large heap of compost, so that there will be no delays in having to mix a fresh supply when some important work is in progress. The occupants of the stove usually claim first attention, because being grown in a considerable amount of heat they are the first to show signs of growth as the season advances. Many very complicated mixtures have at various times been recommended for certain plants, but the tendency of the present day is all in favour of simple composts, because it has so often been proved that if we provide plants with a suitable medium for their roots to permeate, the additional food required can be easily supplied in the form of chemical manures. Good fibrous peat and loam are the staple soils which the plant grower needs, and, as a rule, if these are used in the proportion of one of the former to two of the latter few other ingredients are needed.

The quality of the peat and loam at command will, however, sometimes make it necessary to vary the above proportions. To illustrate the point, let me deal with the circumstances under which different cultivators, whom we will designate A, B, and C, have to work. A is able to procure abundance of that brown fibrous peat which all gardeners delight to obtain, but the loam is heavy and lacks fibre; in such a case it would sometimes be wise to use two parts peat to one of loam, or to employ them in equal proportions. B, on the other hand, has splendid loam of medium texture packed with fibre, but must perforce use peat, which quickly becomes sour. The quantity of loam then used should be increased, and the peat correspondingly decreased. C has good loam, an unlimited supply of sweet, tough leaf soil, but inferior peat. In such a case only the rougher portion of the peat ought to be used, and leaf soil added to render the compost light enough.

In preparing composts one point of vital importance is to use the main ingredients in a rough state. Either chop up the loam with a spade or pull it to pieces with the hand, and shake out the finer portions. An ideal peat has plenty of fibre and very little fine material, but in many districts fairly good peat may be obtained near; it is rather "flaky," and after the fine portions have been shaken out the residue is of good quality, and answers well for the majority of stove plants. Finely ground bonemeal, added at the rate of a quart to a bushel of the other ingredients, some lumps of charcoal, and a tenth of sharp sand, will complete a mixture suitable for stove plants and Ferns. As the various stocks of plants are potted it is then an easy matter in some cases to add more peat or loam as experience may suggest. The finer portions of soils which have shaken out can, with the addition of plenty of sand, be formed into a suitable mixture for propagating purposes.

The advantages of good drainage, and of employing clean pots and potsherds, are so fully recognised by all gardeners that they need only be touched upon lightly, and may be summed up in the following words. So arrange the drainage that the water will pass away freely and evenly, which conditions are secured by surfacing the larger crocks with a layer of finer materials, and then covering with moss or rough peat to prevent the soil from mixing with the drainage. Plants will often grow quite as well in dirty pots as in clean ones, but when repotting becomes necessary those grown in dirty pots lose many of their young roots, which cling to the sides of such pots. In private establishments, too, cleanliness is always necessary for the sake of appearances.

Before commencing the work of potting, to which I shall refer in subsequent notes, see that the compost has been thoroughly mixed by turning; that it is dry enough to prevent "caking" when pressed between the hands, and have it warmed to the temperature of the house in which the plants to be potted are growing.—H. D.

New Vine Borders.

THE compost for new or renovating old borders should now be prepared. The best for the purpose is the top 2 or 3 inches of a pasture, rich and friable, preferably of the old red or new red sandstone formations, and in nature neither very light nor very heavy. It, however, is better rather strong than light, provided it contains plenty of gritty matter, as it always should do, otherwise the material is apt to settle in a soapy mass, and a bad condition of the roots ensues, accompanied by ill health, liability to diseases in greater measure, bad colour, and shanking of the Grapes.

Red loams, as before indicated, are the best, but yellow or so-called hazel loams are good, as both contain a good percentage of oxide of iron, with lime and magnesia, and being in gritty or rock substances of a pebbly nature will be yielded steadily to the Vines, the roots dissolving them out more or less, hence the importance of a free-rooting medium. To good friable loam add a sixth of old mortar rubbish broken small, removing any pieces of wood. Wood ashes or charred refuse should be used to a similar extent, and also a fifth part, especially if the turf is poor, of short, fresh stable manure or horse droppings. To this compost, the turfy loam being chopped up rather roughly, add 28 lbs. of crushed half-inch bones and 3 bushels of charcoal "nuts" to each cartload, and mix thoroughly. This formula has grown prizewinning Grapes, and yielded fine supplies for home use, and also brought good returns for the produce from the salesmen in northern, midland, and southern centres.

In preparing the border provide a foot of drainage, the roughest at the bottom and smallest, not less than road-metal size, at the top, and on this a layer of old mortar rubbish broken up and the finer particles sifted out by a quarter-inch sieve, being very careful to remove any portions of wood, as this fosters root fungi, which, if not actually attacking the roots of the Vines, so bind the compost together by their mycelium as to prevent due moistening of the border, and the Vines suffer in consequence of inadequate supplies of moisture and nutrition. If old mortar rubbish be not to hand secure the drainage with a layer of turves, grass side downward. Where the border is intended for early Vines allow a rather sharp incline to the front or south of the outside for throwing off heavy rains; but for early forcing the roots are best wholly inside, especially for the tenderer varieties, such as the Frontignans and Muscats. Indeed, outside planting is now almost obsolete, the Vines being planted inside, and having borders both inside and out.

A width of 6 feet is quite sufficient in the first instance, and that should be formed inside, to which the roots must be confined until the interior is occupied, not making the outside border until the Vines are thoroughly established. The border should be 30 inches in depth to commence with, as it will settle at least a fifth even when the materials are well compacted, they not being trodden, but beaten with the fork as placed in, and the soil being in neither a dry nor wet condition. By planting rather high opportunity will be given for top-dressing, and roots can be encouraged from the collar, thus increasing the rooting area whilst encouraging the roots to work near the surface.

The proper time for planting Vines is from the time the buds commence swelling until they are an inch or two long in growth, they being cut back in the winter to the length required, keeping cool, and when planting shaking them out, disentangling the roots, and spreading out evenly in the compost. When the Vines are raised from "eyes" inserted singly in turves about 6 inches square, and 3 or 4 inches thick, they may be transferred to their permanent places when well rooted and growing freely, the breakage of a few roots not being material, as this only tends to a more fibrous formation, and that is better than the coiled root system induced by potting the Vines and planting them with the ball intact.—G. A.

Honours for Mr. G. Stanton.—At the meeting of the Reading Gardeners' Mutual Improvement Association, Mr. G. Stanton of Park Place, Henley-on-Thames, was congratulated upon the distinction that had been conferred on him by the French Government in nominating him Chevalier du Merite Agricole. Mr. Stanton, in replying, said that the nomination came to him as a surprise. He received an official letter from the French Minister of Agriculture through the French Ambassador in London informing him of the fact. A few days later came the full insignia of the order subscribed for by old French pupils with advice that the parchment diploma would follow in due course. This he owed, he believed, to his pupils' appreciation of his treatment—for acts of kindness shown in days of the young French gardeners who came to Park Place Gardens for improvement in horticulture, some of whom are now the leading horticulturists in France.

NOTES & NOTICES

Recent Weather in London.—A high wind passed over London from the north-east on Sunday, and brought with it just after midday a heavy snowstorm that only lasted a short time. The wind continued cold over Monday, but very little snow fell. On the morning of Tuesday the metropolis was enwrapped in a damp black pall. The sun shone brightly on Wednesday, but the wind was cold.

Weather in the North.—Pleasantly seasonable weather has continued throughout the past week. Frost has ranged from 8° to 14°, and sunshine has been abundant. Since Saturday the frost has been less intense, and on the evening of Sunday there was a decided thaw, with a tendency to drizzling rain. Monday was a good dullish day, with the barometer at 43° in the early afternoon.—B. D., *S. Perthshire*.

Death of Mrs. J. Cypher.—We learn with profound regret of the death on the 7th inst., of Mrs. J. Cypher, wife of Mr. J. Cypher of Cheltenham. The deceased lady was of the kindest disposition, and will be mourned throughout the town. Mrs. Cypher was seventy-two years of age. The funeral took place on Monday, February 11th.

Gardening Appointment.—Mr. F. G. Drew, late general foreman at Longford Castle, Salisbury, has succeeded Mr. Down as gardener to H. C. Constable Esq., Wassand Hall, Hnll.

Hessle Gardeners' Mutual Improvement Society.—The above society held its usual meeting at the Parish School Room, February 15th; A. Jackson, Esq., president of the society, occupied the chair. Mr. Gant, County Council Horticultural Instructor, from the Yorkshire College, Leeds, gave the last of the series of lectures, entitled "Diseases of Plants, and Their Effect upon Plant Life in General." The lecture was illustrated throughout with lantern views, which added considerable interest to the meetings. The famous Bordeaux mixture was recommended as a means of destroying most of these terrible diseases.

Grand Yorkshire Gala.—Bootham Field, York, will present its customary animated appearance on June 12th, 13th, and 14th, when the Grand Yorkshire Gala will be held. Mr. C. W. Simmons, Harker's Hotel, York, the secretary, favours us with a copy of the schedule, from which we gather that the large sum of £750 is offered in prizes. Though groups of plants are a magnificent feature of the York shows there is really not a single weak section, as the committee adopts a very generous prize scheme throughout. Some of the classes are such as are not commonly met with at the shows of the present day. The secretary will send any needful particulars upon request.

Ealing Gardeners' Society.—Last week Mr. A. Pentney, of the Staines Road Nurseries, Hounslow, lectured on "Plant Diseases and Advertised Remedies." Mr. Pentney said some of these so-called remedies were worse than useless, and could be described in no other terms than as "quack" remedies. As the majority of gardeners and farmers had no knowledge of chemistry, he advocated Government intervention, such as prevailed in the United States and on the Continent. The various insecticides could then be analysed, put on a proper basis, and distributed without fear of evil results. Gardening—especially in relation to the diseases of plants—was largely empirical. The average gardener had to test these so-called remedies for himself for want of a central authority to guide him, and thus a multitude of counsellors brought confusion rather than content. Of all the plant diseases, however, none were worse than fungoid diseases. A capital exhibition of groups of plants arranged on tables was keenly contested. The prizes were generously contributed by Mr. R. D. Preston, of Ealing; while Mr. R. Pinches, of Camberwell, supplied a bronze medal, which added to the contest. First place was secured by Mr. T. R. Hogg, gardener to Mr. A. G. Dixon, Madeley Road, Ealing. The second place must be recorded in favour of Mr. C. Long, gardener to Mr. E. P. Oakeshott, of Montpelier Road. Mr. H. Holloway, gardener to Mr. E. Hyde, of Castlebar, came in third; and Mr. G. Woods, gardener to Mrs. Willey, of Aston Road, was fourth.

Death of Mrs. P. C. M. Veitch.—We learn with the deepest regret of the death on Thursday last of Mrs. Veitch, wife of the well-known and universally respected Exeter nurseryman, Mr. Peter Veitch. Horticulturists throughout the country will sympathise with this gentleman in the great loss that he has sustained. Mrs. Veitch was only fifty years of age.

The Dangers of the Nursery Trade.—At Spalding Police Court recently a bulb dealer was sent to prison for three months for obtaining £17 by false pretences from Mr. George Dickinson, bulb merchant, of Whaplode. The prisoner sold to Mr. Dickinson and other bulb dealers large quantities of bulbs as double Daffodils, but they all turned out to be single varieties, not worth one-third of the money, and the buyers had to pay several claims by London and other merchants to whom they disposed of them. The transaction took place over four years ago, but the accused had only just been apprehended. He alleged that to some extent he himself had been deceived.

Death of an Edinburgh Horticulturist.—Mr. Geo. Goodall died at Murrayfield, on the evening of Wednesday, the 13th inst., aged seventy-eight. As a young man he entered the employment of the firm of Messrs. Downie, Laird, & Laing, as foreman at Pinkhill. He afterwards removed with the late Mr. John Downie to Beechhill. He served practically the same master for fifty years. His skill as a hybridiser, and the success he achieved in the raising of new varieties of garden flowers, are well known. The Viola, Phlox, Pentstemon, and Dahlia have all in their turn received his attention, and many of the varieties raised by him are still unsurpassed for excellence. As an exhibitor he had few equals, carrying off leading honours at shows in this country and also at the internationals on the Continent. His funeral, which took place on Saturday, was attended by a large gathering.—W. L.

The Orchid Stud Book.—Recently Captain Hurst, while foreshadowing the publication of a pedigree work on Orchids, made a canvass of opinion on the question whether he should deal with the following:—1, All garden hybrids which have gained a first-class certificate from the Orchid Committee of the Royal Horticultural Society of London since its formation in 1889. 2, All garden hybrids which have gained a first-class certificate from the committee of the Manchester and North of England Orchid Society since its formation in 1897. 3, The parents and ancestors of the above, whether species or hybrids. He now wishes to thank all those correspondents who have kindly favoured him with replies, and states that he has decided to considerably enlarge the scope of the work, which will now include:—1, The first name and reference of all recorded crosses, regardless of their æsthetic merits, with references to figures and short description. 2, Selected varieties of above, which have been figured in various works, with references and short descriptions. 3, The parent species and varieties of above, with selected figures and short descriptions.

Sheffield Microscopical Society.—A general meeting of the Sheffield Microscopical Society was held on Monday last at the Literary and Philosophical Society's Rooms, Leopold Street, when an interesting lecture was delivered by Mr. Edward Snelgrove, B.A., entitled "Gymnosperms as the Connecting Link Between Phanerogams and Cryptogams." He explained that in botany the term "gymnosperm" is applied to a large group of plants which produce their seeds without any husk, body, or covering of any kind more than a mere scale. Well known examples of this class were Scotch and other Pines, Yew, Cypress, Spruce, Larch, Wellingtonia, Araucaria, &c. These, he said, resemble the flowering plants in having pollen and ovules, the latter are fertilised by the former, and seed is the result. In cryptogams, or non-flowering plants—of which the Fern is a type—there appears what is known as alternation of generations, and in the generation which produces an embryo, the fertilising cells take the form of a swimming body, and the cells to be fertilised are produced of flask-shaped bodies called archegonia. Nothing of this kind appears in the flowering plants, but in the gymnosperms, which are often placed in this class, archegonia appear, and though the fertilising cells do not swim, they retain in some cases, such as of Cycas and the Maidenhair Tree, the essential features of those bodies. It was, he said, for this and several other reasons that the gymnosperms occupy a place above the Ferns and below the flowering plants, though some botanists maintained that they represent a mere siding in the line of development. The lecture, which was illustrated by means of microscopic and lantern slides, was thoroughly enjoyed.

Royal Horticultural Society.—The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, Feb. 26th, in the Drill Hall, Buckingham Gate, Westminster, 1 to 4 P.M. A lecture on "The Making and Unmaking of Flowers" will be given by the Rev. Prof. G. Henslow, M.A., at 3 o'clock.

Bristol Gardeners' Association.—The fortnightly meeting of the society was held at St. John's Parish Room, Redland, on Thursday, 14th inst., a good attendance being presided over by Mr. G. Brook. Mr. W. G. Smith, of Knowle, was the lecturer, on the interesting subject "Insect Pests." The lecture was illustrated with a lantern exhibition of slides prepared for the Board of Agriculture by Miss G. E. Ormerod. Mr. Smith, who is an expert in the science of entomology, dealt with the subject very fully, giving in each case the life history of the insect under discussion, the particular kind of crop most liable to attack, and the methods most likely to prevent or eradicate the pests, in which the judicious use of lime, soot, and salt played a considerable part. Amongst the wide range of insects treated were the wireworm, crane fly, carrot fly, turnip fly, cherry saw fly, clover weevil, cabbage butterfly, wheat butterfly, the many forms of aphids, rose fly, mole cricket, wood wasp, scale, thrips, garden chafer, and earwig. Several questions were asked Mr. Smith, to all of which he kindly and clearly replied, and the hearty thanks of the meeting were accorded him for his attendance. Prizes offered by the chairman for two Cyclamens caused keen competition, the awards being to Messrs. Clarke, Raikes, McCulloch, and Price. [Kindly address your communications to 12, Mitre Court Chambers, Fleet Street, London, in future.]

Reading and District Gardeners' Mutual Improvement Association.—The fortnightly meeting of the above association was held on Monday, the 11th inst., when the president, Mr. Leonard G. Sutton, presided over a large attendance of members. The paper for the evening was "Greenhouse Flowering Plants for Summer Bedding," by Mr. F. Townsend of Sandhurst Lodge Gardens (son of Mr. W. Townsend, the head gardener). The subject was ably dealt with, and the following varieties were strongly recommended for the purpose—viz., Abutilons, Aloysias, Begonias, Bougainvillea, Cannas, Diplacis, Erythras, Fuchsias, Heliotrope, Habrothamnus, Hydrangeas, Lasiandra, Lobelia cardinalis, Nicotiana, Plumbago, Streptosolen, Salvias, Swainsonia, Scented Pelargoniums. During the discussion which followed Mr. Townsend was congratulated on the able manner in which he had presented his subject, and also on being the youngest member who had as yet read a paper before the association. Mr. E. S. Pigg, The Gardens, Samoa, Reading, and Mr. H. Wilson, The Gardens, Lower Redlands Reading, were awarded the association's certificate of cultural merit, the former for a beautiful batch of Narcissus Van Zion, and the latter for a collection of Apples, including Newton Wonder, Wellington, Baxter's Pearmain, Cox's Orange Pippin, Ribston Pippin, Strimmer Pippin, Reinette du Canada, Gascoyne, and Scarlet Seedling. Mr. W. Townsend, Sandhurst Lodge Gardens, made a most interesting exhibit of plants of *Centradenia rosea*. This was not entered for the certificate. Four new members were elected.

Newport (Dundee) Horticultural Association.—A lecture was delivered last week, under the auspices of the Newport Horticultural Association, by Professor C. R. Marshall of University College on "Poisonous Plants." The lecturer first dealt with the meaning of the word poison, and afterwards went on to consider the various common plants possessing poisonous properties. An important group, not usually regarded as poisonous in the ordinary sense, contains such plants as produce irritation of the skin when touched. The *Primula obconica*, if we discard the common Nettles, is one of the most interesting of this type. Its action has been attributed to its hairs, but it seems much more likely to be due to a poison secreted by the plant. The juices of numerous other plants possess irritant properties—one, the "Poison Ivy," being extremely powerful. The influence of climate and mode of growth on the production of poisons, the various kinds of poisons found in plants, and the part these played in its life history, were next considered. One kind of poison, which only developed after the leaves or seeds of the plant were taken, had a peculiar interest. This happens with Peach kernels, which it was said were used by the ancient Egyptians as a State poison. Afterwards the effects of a number of common and garden plants—the Foxglove, Lily of the Valley, Monk's-hood, deadly Nightshade, &c., were described, and the lecturer concluded by a reference to the part played by plants in the production of poisonous honey. The usual votes of thanks terminated the proceedings.

Irish Gardeners' Society.—The usual monthly meeting of the above society was held recently in D'Olier Street; the chair was occupied by Mr. O'Kelly. The secretary, Mr. Hall, read the report showing the result of their year's working, also the balance-sheet, which told of an increase in the assets of their society. After the adoption of the report, the election of officers was proceeded with, the chairman Mr. O'Kelly, being unanimously re-elected. Mr. Richardson was elected vice-president. The committee remain unaltered, with the single exception of Mr. Harris, whilst Mr. Campbell was appointed assistant secretary. Mr. Cottier placed a sovereign to the executive as a prize for a pruning competition, the contest, which is dated for March, being confined to apprentices. Afterwards Mr. Shaw volunteered to read a paper on the essentials of botany from a gardener's standpoint.

Beckenham Horticultural Society.—On Friday, the 16th, a paper, entitled "Fifty Years' Stoking Experience," was given by Mr. H. Cooper, the chairman of the Beckenham Horticultural Society. The essayist took his hearers back to the time of the old flues and the early stages of heating by hot water, he having served where peat was used for fuel, also where twelve fires were in use, located at long distances apart (500 yards), which, by reason of their diminutive size, necessitated constant attention, and in sharp weather to be about till the small hours of the morning. Mr. Cooper's comparison of the present with the past was convincing to his younger hearers that they had much to be thankful for. There followed a good discussion, in which it seemed generally agreed that, whatever the form of boiler, the proper setting of the same is of vast importance, and should be thoroughly understood by the operator. On Friday evening next we have Mr. E. Beckett, on "Vegetables for Exhibition."—T. C.

February Sunshine.—February may doubtless sustain its reputation as a rainy month and give us as much as 4 inches, as in 1866, though the mean rainfall is only 1½ inch. The mean temperature for the month is about 40°. We may hope for a distinct increase in the amount of bright sunshine, fifty hours being the average. In 1899 we had an exceptional record of ninety-nine hours. Jersey and Guernsey with ninety-five and ninety hours respectively, Hastings and Tenby with about eighty-five, Brighton with seventy-seven, and Eastbourne seventy-two hours of bright sunshine will prove most attractive to sun-seekers who cannot go to sunnier climes.

Weather and Crops in Guernsey.—We have just emerged from a long dreary three months of heavy damp weather with very few intervening dry days, and those were generally accompanied by a biting east wind; it is still cold, but dry and bracing. On Thursday morning last the thermometer registered 10° of frost, which, for Guernsey, is severe, and on the same day we had some snow, which, however, soon disappeared. Our shipments since November, owing to the forbidding price of coal for winter forcing, have been small. Coal is now becoming cheaper, but the reduction has come too late for the earlier work. The soddened state of the ground has retarded the blooming of Narcissi, few of which will be fit to cut for another fortnight or three weeks. Growers are now busy getting in their Tomato plants, that is, in the heated houses.—X.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901.										
February.										
Sunday .. 10	N.N.E.	deg.	deg.	deg.	deg.	ns.	deg.	deg.	deg.	deg.
Monday .. 11	N.N.E.	39.0	37.8	43.1	35.6	—	38.4	40.5	44.1	25.1
Tuesday 12	N.N.W.	36.7	34.6	38.6	36.2	—	39.2	41.0	43.9	33.6
Wednesday 13	N.N.W.	31.1	28.0	37.9	25.1	—	37.8	41.0	43.9	16.7
Thursday 14	N.N.W.	33.1	32.0	36.2	30.6	—	36.4	40.5	43.9	23.6
Friday .. 15	N.N.E.	28.0	25.7	33.9	20.7	—	35.8	40.1	43.9	14.6
Saturday 16	W.S.W.	32.0	30.2	34.5	28.7	—	35.4	39.5	43.6	20.0
		34.0	32.9	43.1	25.1	0.07	35.3	39.4	43.6	17.9
MEANS ..		33.4	31.6	38.2	28.9	Total 0.07	36.9	40.3	43.8	21.6

The weather continues dull, dry, and very cold. A small quantity of rain fell on the 16th inst.



Women as Gardeners.

MAY I be allowed to offer my opinions upon the subject of lady gardeners as one who has worked with them? Your correspondent of February 2nd admits their physical incapacity for the ordinary routine of garden work, and proposes to overcome that difficulty by employing them to do the lighter duties in gardens. I should like to ask him if he has considered the claims of the rest of the garden staff in making such a proposal to take effect in a private garden? In my opinion he has not. Imagine a Swanley graduate having completed her two years' course of tuition, including, as it does, a multitude of subjects, nearly every one of which would occupy any person for that period if any appreciable amount of knowledge of the subject was desired. Imagine this young "encyclopædia" taking such a post in a private garden among journeymen not much, if any, her senior in years, but having "graduated" from the pot-washing-tub and crock-bench, through at least five or six years of varied experience, and now, just as they are rising from the drudgery part of their chosen profession, this young lady, who two years ago left school to enter a horticultural training college, steps in and appropriates the "plums" coveted by these hardworking sons of the soil through many somewhat weary years.

In every charge usually held by journeymen in private gardens there is a certain amount of light work which might perhaps be done as well, but not better, by a lady gardener. But if one was employed to go round the various charges and perform these light duties while the responsible man was doing some heavy work or other, say Grape thinning (as suggested by another correspondent), and the man carrying water in 6-gallon cans to water the border, the injustice would be apparent at a glance, and in all probability the result would be a revolution on the part of the men, which, in my opinion, would be quite justified. No; such an arrangement would not work, and the lady gardeners must be aware of it. If they have anything to do in a private establishment let it be a charge to themselves, then if any rough or heavy work is to be done they can have a labourer to do it. The new woman objects to being the helpmeet of mere man, but all the same she must not be allowed to have him as her servant. Not all the lady gardeners are new women, some are most intelligent, and fully aware of the somewhat awkward position in which they are placed through taking up gardening as a means of livelihood because of their enthusiastic love for plants and flowers.—JANOX.

The Persimmon.

I NOTICE in the Journal of December 13th a reply to a correspondent about the Persimmon. You do not seem to know about the best Japanese Persimmon (*Diospyros Kaki*), as you say that it is easily raised from seed, but the plants that I got direct from Japan have no seeds in their fruit, and seem to be very much superior in every way to the ones you describe. Mine were planted on the 13th January, 1892, and they commenced fruiting in 1895; the trees flower at the end of March. There seem to be four different kinds, but the tickets were not readable when the plants arrived. The trees bear very well, but are inclined to set too many fruits; the size of the tree is as you state, small; after nine years the tallest of mine is only 7 feet. The colour of the fruit is reddish orange, with a smooth shining skin; size of fruit varies, but can be taken as 3½ inches diameter and 3 inches deep. As there are no stones in the fruit the whole of the pulp inside is edible; it is like a jelly, and is eaten with a spoon; the skin is thin. The shape of the fruit differs in the different varieties of the trees, just as Apples do, some are pyriform, others round, and others globose. One tree this last year, after producing regularly pyriformed fruit for five years, suddenly seems to have gone mad, and produced over thirty fruits, all of which were deformed; no two were alike; they were apparently combinations of two and three fruits. They had horns sticking out here and there, some were like bullocks' heads with curved horns, but they were all good to eat.

The Persimmon (*D. Kaki*) ripens here from the end of September to the end of December. For two years at first the fruit was not damaged by birds or animals, and the bright fruit hanging on the trees in the winter after the leaves had fallen was a very pretty sight. But alas! in the third year the birds and night animals tasted the blood of the Persimmon as it were, and since that nothing but stout wire netting will protect the fruit; wrapping up in cloth is no use, as it is torn away. The butcher birds have been most noticed trying to get at the fruit. As to the taste or flavour of the fruit, opinions differ from yours—"it is tolerably pleasant" to "it is perfectly delicious." My own opinion is that it is more than "tolerably pleasant."—A. C., *Dehra Dun, India*.

English Vegetables in East Africa.

We notice in the interesting article under this heading during last month your correspondent states that he experienced difficulty in raising English Potatoes. Some years ago a botanist to one of the East African Administrations wrote us as follows in this connection: "I have raised magnificent Potatoes from seed (not sets), and have noted something like 500 varieties to select from. They are producing at the rate of five tons per acre without manure, and there is no trace of disease. Within twelve months from sowing I am reaping full grown large Potatoes from the second planting. These consequently will be regularly native reared African varieties, some of which I have no doubt will become of great value and suitable to the country." From this it will be gathered that Potatoes can be grown from seeds in that climate. Indeed, Dr. Peters' expedition up the Shire River is regularly supplied with seeds from this country.—JAMES CARTER & Co.

Should Tomatoes be Stopped?

THE opinions of experienced growers of Tomatoes upon the following point would be valued by a young grower:—The ground in my hot-houses is planted with Tomatoes, which I intend to train up to the roofs, to last for the whole season. Should I stop the plants after they have set four trusses, and then let them run up afterwards from a side shoot? Or should I leave the leader to run up unchecked? The advantage of the former plan, I imagine, is that ripe fruit is obtained earlier by it, which is beneficial with reference to price. Whether there is any corresponding disadvantage from stopping the leader I do not know.

If the plants are stopped, should the stopping be done as soon as four trusses of flowers have just been formed, or at a later stage, and what stage, in the setting of the fruit? Again, would it be desirable to keep on stopping for a time, and for how long? Or should a side shoot be allowed to run up immediately after the leader has been stopped? Lastly, should the side shoot allowed to run up be the topmost one? It seems to me that, although by stopping the plants, I shall get more fruit ripe in the latter part of May and in June, I may perhaps get less ripe altogether by the end of June.—BEGINNER.

Liliums.

THOSE who have tried to grow many varieties of these gorgeous flowers will very probably agree with "*D., Deal*," that for outdoor work in the generality of gardens there is no perpetuity about them. Like our old friend, I am very fond of them, and though it is very often "*Love's labour lost*" I still cling to them. I have often thought as regards the old *L. candidum*, and its freak of preferring a little cottage garden to show off its beauties, that it probably gets a far larger amount of care and attention in the smaller place, whilst in the larger there is not much time given to what after all, and in spite of its beauty, is a very common flower.

In many gardens I am certain it gets no chance; slugs and snails dote on it and pay it continual attention, but their tender mercies are cruel. Often have I seen the stems literally stripped of leaves, and under such circumstances the bulbs naturally suffer. The cottager, no doubt, has snails also, but if the gudewife succeeds with them—I mean the Lilies—I think it is because with candle or lantern she looks for the culprits at night and stops their depredations; in the daytime they know where to hide. In a large garden it is difficult to do this, and there, if you begin pest-hunting, there seems no end to it. Take the injury done to wall fruit, especially Peaches and Nectarines, and if the wall be an old one you may look in the daytime, and unless you accidentally lift a leaf may never notice a wood-louse, but come with a lantern at night and the not-yet-ripe Peach, which has been attacked, will be black, with all sizes feeding. Where are they in the day?—in every nook and cranny of the wall. I have killed hundreds night after night, but the hosts seem undiminished. So, again, with snails and slugs on a wet evening; but if it is a dry time I do not think these appear till a plentiful dew has fallen, and we are in the "*arms of Porpus*," as Sam Weller, I think, puts it.

Unfortunately for us, the depredators of the *Lilium* tribe are under the soil. I know Wallace & Co. advise planting many of the bulbs surrounded by sand and peat to keep off worms. I believe worms feed on decaying vegetable matter, and possibly they do not touch the bulb until decay has begun from some other cause; worms, however, seem to me like cats, they prefer going through a hole, even if a small one, to the ordinary road, and so they slip into the scales of the Liliums, and if when there they coil themselves up, they seriously disturb the scale, and it may commence to decay. Although I do not believe they are the original cause of mischief, I have rarely taken the dilapidated bulb to pieces without finding a worm therein; the small pink centipede I am disposed to blame for the loss of many Liliums.

Then again, what is the soil of the *Lilium* tribe in Japan, where they seem to grow better than weeds? I have sometimes had auratum that looked as if they had been grown and packed in a moist yet friable light coloured clay, very different from our garden soils. Now, Wallace and Co., in their Lily Catalogue, give us three kinds of soil for Lilies.

1, Any good garden soil, well dug, with the addition of a little loam

or leaf soil, according to nature; 2, deep friable loam, or if soil be clayey sand and leaf soil; 3, peat and moisture.

Then they go on to specify certain varieties that will do in each of these. Well, I have tried in No. 1, *excelsum*, *Henryi*, white *Martagon*, *Szovitzianum*, *speciosum*, *Melpomene* and varieties, and *tigrinum* varieties. *Henryi* and the *Martagons* seem to last well and to increase; the *Martagon album* is lovely. *Henryi*, which looks like, and is, I believe, called the yellow *speciosum*, is unlike that group in growth, and does not to my fancy equal that group in form of flower. It blooms grandly, thirty on a stalk is no exaggeration, and several of the smaller bloom stalks have three flowers, and this seems hardy enough. Alas! the rest of the *speciosums* and *Melpomene album* have dwindled out of doors. For greenhouse culture *album* and *Melpomene* are both lovely, the cream of the group, and for any small grower sufficient. *Krætzleri* is flimsy in breadth of petal, and, I think, feebler in constitution. A new *album* I bought last year and restricted to pot culture is this year sending up two promising heads, certain, I fancy, to bloom satisfactorily. The *tigrinum* varieties have done well for two or three years, but were feebler last year, whilst *excelsum*, *Szovitzianum*, *Browni*, *Humboldti*, *longiflorum*, *sulphureum*, a lovely flower, all disappeared.

Of all the outdoor trials *pardalinum Bouzzei* seemed the most satisfactory; the flowers are showy, gorgeously so, and my bulb increased rapidly. I was delighted. Last year it sent up eight or ten heads, but they were smaller, and at 18 inches growth ceased and decay came. Messrs. Wallace suggested drought, advised taking up; bulbs looked going back—but have been replanted according to advice in moist peat and sand. Shall I see them again? I fear not. And now, simply in defence of the advice given by these experienced and successful growers, Do we follow it? I acknowledge that in small stocked gardens there is no space for "well digging," and I have contented myself with well breaking the soil as far as I could with the trowel. Is this "well digging," on which Messrs. Wallace lay great stress? I confess, No.

Do they like to have neighbours close at hand so as to converse with their relatives? Well, where they succeed, it does seem to me that they do. Look at the common purple *Martagon* under trees, where they often seem like weeds, and this idea is rather forced on me, as I see that Messrs. Wallace's beds, as by photographs, have a number of the same sort together flourishing, and something like twenty-five varieties are in a list with prices of 100 bulbs. This, again, is against the small otherwise well stocked garden. There are several other points I would notice, but your space and patience, I fear, is exhausted. I may crave space later.—Y. B. A. Z.

Planes.

NOTWITHSTANDING the ample descriptions in botanical dictionaries and the horticultural press, including also that recent interesting illustration and instructive exposition in the *Journal of Horticulture* (August 9th), relative to the Thames Embankment, there still exists considerable confusion as regards the identity of the Eastern and Western Planes. The names apparently are often used almost indiscriminately. For instance, whilst contemporaries have given the Thames Embankment Plane as the Western or occidental species, the *Journal* gives it as the *acerifolia* variety of the species *orientalis* or Eastern Plane; and, further, I have somewhere read that Mr. William Paul described the Embankment Plane as of the Western kind. Evidently, however, it must have been the Eastern that was intended, but unfortunately I have never had the opportunity of examining the Embankment Planes when in leaf or fruit myself; the floral and frutescent character, as well as the forms of the foliage in the different species, being important factors in identification.

A contemporary some twenty years ago remarked that the Western Plane appeared to be more generally recommended to be planted, but for what reason in preference to its Eastern rival it was incomprehensible, unless owing to the presumed advantages of its "more rapid growth and hardiness than that of the Eastern species." Other authorities, however, declare that the latter is the hardier. The large old Plane—planted in 1817—in Lambeth Gardens has been mentioned as the Western species, and in the *Journal of Horticulture*, August 9th, 1900, the magnificent Planes in Berkeley Square, and the ancient specimen in Wood Street, and several in the grounds at Buckingham Palace, are adverted to as evidence of the suitability of the Plane for town planting, but it does not say what species are the specimens indicated.

There are numerous Plane trees which have been planted in and around Birmingham during the last quarter of a century, also several fine old specimens in residential grounds, including a still flourishing old specimen in the centre of Birmingham, in Moor Street. About two years ago large numbers were planted by Lord Calthorpe on the Edgbaston estate for embellishing the sides of chiefly all old and new roads apportioned for building purposes, alternately with Limes and Horse Chestnuts. The Plane trees, however, are taking the lead in growth, and it is questionable if it was advisable to plant the Horse Chestnut, except in sheltered localities, as it is seriously affected by cold

winds in exposed sites, as proved by long established specimens annually presenting a very sorry aspect early in the season of foliage, and from which state they do not entirely recover for the remainder of the summer.

It is, however, with the Planes we here have to do, and I think it will be conceded that ample apology is rendered by the foregoing remarks regarding my deductions as to the real identity of the Planes in question; and, in conclusion, I would just advert to another little known species of the Western Planes—viz., the Californian Plane, *Platanus racemosa*, which is remarkable for the large size of its leaves; it is said to be the hardiest of all the species. It is of rapid growth, and highly ornamental, and can be distinguished by its deeply five-lobed leaves, the under surface of which, even in the fully matured state, is copiously clad with woolly hairs. The wood is said to be far preferable to that of *P. occidentalis*, being harder, more durable, and less liable to warp. The wood, when young, is yellowish-white, when old, brownish, and is esteemed for cabinet work. It is said that the Eastern Plane attains to a great age, and that there is on the banks of the Bosphorus—its native habitat—a specimen supposed to be more than 2000 years old, more than 141 feet in circumference at the base of the trunk, and which extends its branches 45 feet from the trunk. No tree was more admired for its ornamental character by the Greeks and the Romans, and for centuries the youth of Greece assembled under its shade in the groves of Academus to receive lessons in philosophy.—G. W.

Dunkeld House.

ABOUT fifteen miles of a ride from Perth by rail or cycle on what may be called in either case the Inverness Road brings you to Dunkeld, near which the Duke of Atholl has one of his residences. Dunkeld was a place of hoary antiquity long before the foundations of its Cathedral were laid early in the fourteenth century, being at one time the capital of ancient Caledonia. The Culdee monastery, founded there by a Pictish king, was in 1130 made by King David I. the seat of a bishopric, which ranked the first in Scotland. No landscape gardener could possibly desire a finer field for his labours. The wonderful fertility of the Tay basin, which extends from the dark Pine woods and green glens far up in the mountains to the north and west of Perthshire all the way down to the smiling Carse of Gowrie, seems here to reach a climax. Nearly all our hardy trees thrive as they do in few other places, the perfect shelter of the encircling hills excluding all rude winds. Down by the side of the river, under the thickest shades, is seated the town of Dunkeld.

But the modern gardens and pleasure grounds and not ancient town claim our attention. Passing from the bridge and along the main street, out the north road we soon come to a fine gateway, which is the principal entrance to Dunkeld House. The kitchen and fruit gardens, just above us to the right, form an enclosure of 6 or 8 acres. They have long enjoyed an enviable notoriety, indeed it may almost be said that the late P. W. Fairgrieve made them for a time the hardy fruit growing capital of Scotland, taking as he did the principal prizes in that department for years in succession. At the time of our visit at the end of September, the place seemed like the mouth of a cornucopia. Apples were bending their branches to the ground and rolling about everywhere. They were growing in cordons, pyramids, trained to the walls, but chiefly as bushes or dwarf standards with very little pruning. Pears were mostly cordons or large wall trees; many were loaded, some thinner, and a very few with few or none. Plums were very fine, many sorts usually grown on walls being here loaded as standards. Peaches, Nectarines, and Apricots were all represented by numbers of healthy trees, some rather old and the fruit consequently small, but others in their prime. A considerable part of the area is taken up with Strawberries and small bush fruits.

In the centre stands a good long lean-to Peach house, with the trees on a front trellis and on the back wall. The fruit was gathered, but the trees looked satisfactory. Vegetables were mostly good, being clean and well grown, a quarter of extremely fine Carrots being specially noted. The glass department, save the Peach house already referred to, stands outside the walls to the south-east. It is in rather bad repair at present, but is expected to be renewed shortly. The inmates, however, are mostly robust enough, Tomatoes and Melons being as fine as one could wish to see. The Melons are growing in an old-fashioned pit, fine green plants with three or four good fruit on each. We felt a certain pleasant cool damp in the house owing to the earthen floor, with only a rail or two for a path, the turf walls, and the minimum of stonework or concrete. Tomatoes were growing in similar structures, very fine large fruits from end to end. Other sections of the same range

were occupied by tuberous Begonias, including good plants of fine varieties. Other small houses were taken up by Dracænas, Palms, a few Orchids, and odds and ends. The vineries are mostly occupied by Vines rather past their best, but the bunches, though small, were good in berry and all well finished. One house of young Muscats was making good progress, the bunch or two each Vine carried being nicely finished and the wood strong and hard.

The mansion—a new one—is nearly two miles from Dunkeld, and perhaps one and a half from the gardens. It stands close by the river side, in a beautiful undulating park—a noble pleasure ground, ready made all but the approach. Much, however, has been done to improve it by Mr. Fairgrieve and his noble employer, which improvements have since been going on under the careful supervision of Mr. McGregor, the present gardener. An enormous amount of soil shifting and other work has been done, and no expense spared. The place is well worth the study of anyone interested in landscape gardening, with its fine flowing

noble in proportions and architecture, mellowed by the hand of Eld, its lofty walls crowned with stray wild flowers and sprays of climbers, its roof the vault of heaven, its floor green graves and mossy tombstones. Such would be an imposing picture anywhere; here beside the sweeping river, on the green lawn with the great trees round and Craigybarns as background, we can imagine nothing finer. Had we crossed the river by a ferry boat about half way from the mansion, we should see Iver and the house of famous Neil Gow the fiddler and “crony” of Burns. Following up the Braan, a tributary from G'enqueich, we come in about half a mile to the beautiful hermitage perched on a rock in front of a fine waterfall. By means of mirrors the foaming water seems reproduced on every side, and ever goes soaring upwards from the ceiling to be gathered into a frothy pool high overhead. Another grass walk, called the Bishop's, leads from the Cathedral along the top of the Holly bank already mentioned. It is bordered by fine smooth trunked Beeches and other trees, including a few foreign Conifers, and



DUNKELD CATHEDRAL.

curves and soft lines. All the fine trees and other amenities of the place have been carefully preserved. At the east side of the house stands an exceedingly fine ornament—a quaint old Larch, with the strangest great twisted rootstock high above ground level. Another curiosity of a different kind is not many yards distant—a large slab of stone, with the figure of a horse and its rider clad in armour cut into its surface near the one end. The work is well drawn, but roughly cut; the rider nearly obliterated by time, or perhaps having been less deeply cut. We could glean nothing of its history. A few geometrical beds close to the house, and several informal ones filled with shrubs, and annuals farther back comprise the flower garden.

A walk down the waterside leads through the American garden, a pleasant retreat in warm early summer or on any fine day. A large collection of the usual, and some unusual, occupants of such a place are here quite at home. Then along a green drive fringed by the grandest of Scots Firs and other native trees, the steep bank on the left clothed with an undergrowth of the greenest of Holly. At the end we come to the Cathedral, a fitting terminus to such a promenade,

ends near the American garden. About half way across the park between the gardens and Cathedral, are two Horse Chestnuts, surely the largest for many a mile round. Looking over their heads to the left towers Craigybarns, wooded to the crest with dark green Pine. A legend tells that the seeds of part of that forest were shot up or down (I know not which) from a cannon's mouth. Whether true or not we cannot say, but only steeple jacks could sow it otherwise.

Close to the Cathedral one, if not more, of the first Larches introduced to Britain in 1728, or earlier still, flourishes vigorously. Tradition tells they were first carefully grown in pots in a glass house, but such coddling must have had no injurious after effects. Long may they wave their graceful boughs over the dust of the wild Highlanders sleeping beneath (the Wolf of Badenoch among them). Such are a few imperfect notes on a place on which a volume could be written. Long may the noble proprietor and his three brave sons, who have been fighting the Boers, enjoy the princely domain handed down by their ancestors, is the wish of all who know that a courageous and loyal aristocracy adds redoubled strength to a courageous and loyal people.—C. M.



With Special Virtues.—Tomatoes are most helpful to the system when eaten raw, as the volatile oil they contain is dissipated by the heat of cooking. Green vegetables, such as Spinach and Cabbage, are invaluable as medical articles of diet, as they possess blood-purifying properties, and act indirectly on the liver. Turnips are nutritious, while the young Turnip-tops are possessed of tonic properties. Parsley is a blood purifier, and should be eaten both raw and cooked. An almost exclusive diet of fruit and vegetables is supposed to induce purity of complexion.

Rotation in Garden Crops.—Mr. Meehan says, "Whatever may be true in farming, the practical gardener usually understands that the general rule adopted by the farmer, as to the rotation of crops, does not prove to be of equal necessity in gardening. But there can be no rule for this. The good gardener alone must decide for himself in each case. For some kind of crops, and under some conditions, a change of crop from year to year may be desirable, but with good judgment in each case such a course may not be necessary. The Potato especially, under proper treatment, has been grown successfully on the same ground for half a score of years. Some special manure is desirable, but brains constitute the best fertiliser."

Dew.—The dew is condensed out of the air in contact with surfaces below a certain temperature. At night the surface of the earth and all things on it, and especially the smooth surfaces of vegetable productions, are constantly being cooled by radiation. If the sky is covered with clouds, the radiation sent back from the clouds nearly supplies an equivalent for the heat thus parted with, but if the sky be clear no equivalent is supplied, and the surface of the earth and things growing on it become cooler than the atmosphere. If the night also be calm, the small portion of air contiguous to any of these surfaces will become cooled below the so-called dew point, and its moisture deposited on the surface in the form of dew.

Adiantum Farleyense.—This magnificent East Indian species may well be termed the Queen of Maidenhairs. The large lobes of the fronds are finely crimped, so that the effect is splendid. As an exhibition plant there is no mistaking its value, either as a single specimen or in a collection of Ferns, judges too rarely seeing it in perfection. I have found the most common error is to put too much peat in the compost. In commencing the cultivation use clean pots and ample drainage. The compost I have used with conspicuous success consisted of two parts of loam, one of fibrous peat, leaf mould, and coarse silver sand. Cover the drainage with the rougher portions and pot somewhat firmly, lightly watering the following day. Place in a temperature of 55° or 60°, being particular not to overwater or expose to bright sunshine, or the plants do not assume the rich, deep colour found in shaded plants. When the roots fill the pots it will take a good share of water, but too much or not enough will completely ruin its prospects. As *Adiantum Farleyense* produces heavy fronds a little staking is quite necessary; this, if carefully done, will show no unsightliness.—R. P. R.

Conifers as Rain Gauges.—Mention has already been made of the influence of certain more or less severe droughts in the French Mediterranean upon *Pinus Laricio* of Corsica, and Cephalonian Fir. The lengthening of the branches of these two species is always proportionate to the quantity of rain falling during those months of the year when it is most profitable to them. Co-efficients have been established indicating what the degree is for each month of the year. These co-efficients enable the relationship that exists between the amount of rain fallen and the greater or less intensity of the vegetation which it has encouraged to be determined. It is shown that, under these conditions, it is possible to judge approximately the quantity of rain which has fallen by measuring exactly the length of the leader, or of the branch produced yearly on these species of Pine, and if the estimate is not absolutely proportionate to the quantity of rain registered by the rain-gauge, it closely approaches to it; and a still closer estimation may be made by taking into account the relative value of the results produced by rain in the several months of the year. It is, therefore, possible, to a certain extent, to use plants specially selected for this purpose as actual registering rain-gauges.—FELIX SAHUT (in "Revue Horticole.")

The Woodman Spared the Tree.—A Hartford (Conn.) correspondent says: "I must tell you a singular deed showing the love of trees of our late Bishop Williams of the Episcopal Church, as told in the 'Hartford Times,' who once put down his foot on the tree slayers who cut the fine Elms down on the street where the Berkeley Divinity School in Middletown is located. When the workman approached those trees on the grounds of the school, the good bishop said, 'Halt! If you cut down these trees I move the school out of the city.' It had effect. The grand Elms were left undisturbed. Though he be dead now, at the age of eighty-two, may his example be kept green whenever necessary shade trees are in danger of annihilation."

A Mellow Soil.—The term "mellow," as used in agriculture, has quite a wide range of meanings. When applied to the skin of a beast it implies that the animal has a soft, "sappy" hide, covered with a thick, dense coat of fine "furry" hair. As applied to soils the term "mellow" usually implies that the land has been through a successful course of rotation, and has been brought into such a fine state of tillage and such good condition of fertility that it may be regarded, says the "Farmers' Gazette," as being in as nearly an ideal condition for crop growing purposes as possible. The greater the extent of a farmer's holding which can be regarded as in typical "mellow" condition the better the land will be, either from an arable farmer's or from a grazier's point of view.

Derivations of the Name Sedum.—Britton and Brown, in their truly great work, "The Illustrated Flora of the Northern United States, Canada, and the British Possessions," give the pronunciation of the Stonecrop—Sedum—as Se-dum, and say that the name was derived from "Latin, *tosit*, from the lowly habit of these plants." The logical mind will wonder how these plants are more "lowly," or "sit on the ground" better than hundreds of other species. It is singular that these learned authors should adopt such a dull explanation. In vol. i., first series of "Meehan's Native Flowers and Ferns of the United States," page 85, issued in 1878, it is shown that our House-leek was the original Sedum of the ancients; and that the plant being commonly used as a poultice for assuaging the pains of burns and scalds, derived its name from these assuaging properties, and that the pronunciation should be Sed-um, and not Se-dum. But it is hard work to uproot error.

The Cranberry Cultivated.—There has been some talk of late about planting the Cranberry on waste places. The Cranberry grows on moist, boggy spots throughout the country, but it is much more frequent in the north than in the south of England. The Cranberry is by no means hard to cultivate, provided it has plenty of water and some peaty earth. No doubt it would grow in many of the lower-lying spots in the Pice country round about Woking. It can be sown or planted, and the planted slips soon take root if the spot is at all favourable. If we took to growing Cranberries in quantities in England we should only, says a daily paper, be reviving an old practice. Great quantities of the fruit were cultivated in the eastern counties at one time, and sold in Norwich and elsewhere. When much poor land was drained and prepared for agriculture in Norfolk and Lincoln, Cranberry cultivation gradually disappeared. Hence Cranberries sold in London to-day are mostly, if not entirely, foreign-grown. Russia sends us large quantities; in Norway the fruit is largely used. Eaten with thick cream it is very good. Cranberry jam or preserve is also favoured by the Scandinavians.

The Hard Woods of Paraguay.—Quebracho is one of the most profitable woods in Paraguay. It yields an extract used for tanning leather. The forests of Paraguay are said to be full of it, and among other trees in the unexplored territory west and north-west of Paraguay are the following:—Virapuita, Virara, Lapacho (very heavy, and a fine hard wood much in request in Buenos Ayres), Jacaranda, Palo Santo (which derives a fragrant odour from its resin, and from which a fine extract is made), and Curupay, which is excellent for building purposes, and whose bark contains tannic acid. The United States Consul at Ascension says that Quebracho and other woods named are found in the west and north of Paraguay. In the south-eastern part, 360 miles along the Alto Paran , stretches a forest full of the most precious hard woods as follows:—Incienso, with an extract used as incense in the churches; Curupay and Lapacho, the last more abundant than in the north; Urudai, Timbo, Iviraro, Piteribi, and Quayavi. Cedar grows widely, the trees are about 80 feet high and 12 feet or 15 feet in circumference. The bark is used for tanning. A league of land in Paraguay containing Cedar costs about £200.—("Journal of the Society of Arts.")

Ixora Culture.

I VENTURE to say that out of all the specimen stove and greenhouse plants staged none has a greater effect on the eye of the public than a well-flowered *Ixora*, as it is simply regal from any point of view. Another important point in its favour is that it is not one of those transient flowers which opens to-day and is gone to-morrow, but if carefully humoured will give a return throughout the summer and autumn, and will add a brightness all its own to the stove or intermediate house. A few notes as to culture will, I think, be welcomed by those who do not successfully grow them.

The multiplication of the *Ixora* is not a difficult matter to those possessing a good propagating case. Prior to inserting the cuttings it is well to have some 3-inch pots well washed and thoroughly drained, using as a commencement two parts of peat to one of leaf mould and good silver sand. The cuttings should be about 4 inches long and of sufficient firmness to keep them from damping. Insert them and water through a fine rose, allowing the leaves to get moderately dry before plunging the pots in the propagating case. Damping may be avoided by admitting a little air during the day to dispel the moisture, shading from hot sunshine. In time roots will be formed, and it is just as well not to leave the plants too long in the plunging material, but see to their removal into larger pots; 5 or 5½-inch pots will be suitable, the compost being three parts of best fibrous peat with all the loose material removed, some rough leaf mould, lump charcoal, and coarse silver sand. Drain the pots in a perfect manner, and pot deeply enough to allow the lower leaves to nearly touch the surface of the soil. If convenient re-plunge in a propagating box, shade for a time, and syringe twice a day when the roots are on the move. Good stout shoots propagated quickly will give flowers the first season, but where well-furnished specimens are wanted it is advisable to pinch the shoots when about 5 inches high and get as much growth as possible the first season, then a good result may be looked for during the next year. As autumn comes round much less water is required, and the syringing should be discontinued, keeping the roots on the dry side until the plants are ready for starting the following spring.

The bush and pyramid forms are those generally adopted by

exhibitors, the former finding much favour by reason of the few requirements needed to bring about the best results. All the flowers can be seen at a glance, whereas it is not so in the case of pyramids.

The *Ixora* is subject to insect pests—viz., mealy bug and thrips, and it is for this reason, more than any other, that they are not more largely cultivated. In these days, when it is war to the bitter end with all insect pests, the good grower can, with a little perseverance, soon be rid of them by using any of the various insecticides so freely advertised. The great lodging place is in the points of the new shoots, which want deftly handling so as not to cause injury.

It is not my intention to deal with very many varieties, but mention what I consider to be best. *I. coccinea* is free flowering and useful, its bright scarlet heads and long tubes standing out conspicuously. *I. coccinea superba*, as its name implies, is a finer type not only in its

richly coloured trusses of flower, but in its shapely habit of growth. *I. Duffi* is not largely grown owing to its strong habit of growth, but where space is no object there is no mistaking its long pale green leaves and the massive heads of reddish crimson flowers. *I. Pilgrimi* is most excellent, for not only is it a rapid grower, but its freedom of flower is such as to commend for any purpose the rich orange scarlet flowers. In *I. profusa* we have an admirable variety; the flowers are of a warm shade of rosy salmon. *I. regina* is of neat habit, and the trusses are not large, but freely produced, and last long in perfection. *I. Williamsi* is largely used by exhibitors, and is probably one of the freest forms; its rich rosy salmon flowers and compact growth make it a favourite with everyone.

In conclusion, I may mention that the season of flowering will be greatly prolonged if, when

the trusses are almost developed, they are gradually inured to the temperature of an intermediate or almost cool house, not leaving them so long in the autumn that the cold weather will affect them, but giving moderate heat and little water, so as to get the growth thoroughly firm.—R. P. R.

Humus.—This is a term applied to the organic partially decayed matter in the soil. Leaf mould, wood dirt or a green crop ploughed under forms humus. Humus is the principal source of nitrogen in earth. Its action is beneficial not only in enriching but mechanically improving both heavy and light soils.



IXORA REGINA

Royal Gardeners' Orphan Fund. Annual General Meeting.

Mr. H. B. May presided over the members who assembled at Essex Hall, Essex Street, Strand, on Friday last, to adopt the report of the committee and the balance sheet for the past year, and to transact other business. There were present Messrs. H. J. Veitch, W. Poupart, G. Monro, J. Asbee, W. Cuthush, R. Cuthbert, R. Dean, A. Dean, W. Roupell, G. Kelf, H. J. Jones, J. F. McLeod, G. Melady, P. R. Barr, G. Gordon, C. Osman, J. Lyne, W. Bates, R. W. Alderson, J. Fraser, W. Howe, and the secretary, Mr. Bryan Wynne.

Immediately subsequent to the notice convening the meeting having been read, the chairman rose to refer in well chosen terms to the death of the late Queen, and moved that the following address be forwarded to Queen Alexandra. Mr. Harry Veitch seconded, and it was carried unanimously.

To her Most Gracious Majesty Queen Alexandra, Lady of the Most Noble Order of the Garter.

THIS LOYAL AND DUTIFUL ADDRESS OF THE PRESIDENT, VICE-PRESIDENTS, TREASURER, AND COMMITTEE OF THE ROYAL GARDENERS' ORPHAN FUND. MOST GRACIOUS QUEEN:

We, the undersigned, representing the Royal Gardeners' Orphan Fund, humbly approach your Majesty to offer our respectful sympathy, to express our heartfelt sorrow on the death of our late Sovereign Lady Queen Victoria, and to assure your Majesty that we deeply share the profound emotion that has affected all hearts at the irreparable loss which your Majesty, the members of the Royal Family and the whole Empire have sustained. We venture also to express our deep sense of gratitude to your Majesty for your gracious patronage of this Institution, and to state that this benign influence has greatly conduced to its present prosperous condition, and we humbly beg leave to assure your Majesty of our respectful attachment and devotion to your royal person and also of our dutiful loyalty to his Most Excellent Majesty the King.

Annual Report, 1900.

The committee in presenting their thirteenth annual report have pleasure in making the announcement that the steady progress reported in 1899 has been well maintained during the past year, the total receipts from all sources showing an increase over the previous year's revenue of over £100, whilst the committee have also had the gratification of disbursing in allowances to the orphans the largest amount paid in any year since the Fund was established—viz., £1033 12s. 6d., and their pleasure in the success of their efforts in this direction will, they are sure, be shared in by all supporters of the Fund. The subscribers will notice in the statement of accounts presented herewith, that the amount disbursed in the form of grants in aid also shows a sensible increase over the amounts paid in previous years, and the committee call attention to this fact as showing that those who have charge of orphans are taking a keener interest in rules 13 and 14, and thus more children are benefited by the Fund at the time when they cease to be chargeable to it, and require assistance in the purchase of clothing or tools when commencing to earn their own livelihood; while those waiting for election are helped as required, such assistance proving of the greatest value to those who receive it.

The number of orphans who have been elected to receive the benefits of the Fund during the past twelve years is 127, and the total amount dispensed in allowances during the same period is £8744 15s. The number of orphans now on the Fund is seventy, exclusive of those to be elected this day.

CASH STATEMENT FOR THE YEAR ENDING DECEMBER 31st, 1900.

RECEIPTS.		
To Balance from last account	£866 4 5	
„ Subscriptions, general	£292 17 7	
„ Ditto local secretaries	69 11 0	
	362 8 7	
„ Donations, general	190 2 0	
„ Ditto local secretaries	14 10 0	
	204 12 0	
„ The Emma Sherwood memorial	13 0 0	
„ The James Martin memorial	135 0 0	
„ Annual dinner	605 18 0	
„ Advertisements in list of subscribers	30 13 6	
„ Dividends on stock and interest on deposit	310 8 9	
„ Return of income tax	23 15 6	
	2552 0 9	
„ sale of £7070 6s. 10d., 2½ per cent. Consols,	7127 14 9	
	£9679 15 6	

NOTE—INVESTMENTS:

3 per cent. London & County Consolidated Stock	£7240 15 10
3 per cent. Canada Stock	2000 0 0
N. & N. W. Railway Preference Stock	340 0 0
Thomson Memorial Trust:	
East Indian Railway B. Annuity of £14 (cost)	430 11 0

Having inspected the securities and examined the books and vouchers supplied to us, we hereby certify the above account to be correct.

February 13th, 1901.

P. RUDOLPH BARR } Auditors.
M. ROWAN }

The committee desire to acknowledge with grateful thanks the receipt of £135 from the Reading and District Gardeners' Improvement Association, raised by the members and supporters of the Association as a memorial to the memory of the late Mr. James Martin, so well known among horticulturists generally as nursery foreman to Messrs. Sutton & Sons, and one of the most skilful of hybridists, as he was also one of the kindest natured and most intelligent of men. The right of voting in connection with the memorial will be exercised for fifteen years by the Association with which Mr. Martin was so closely identified.

The annual festival held at the Café Monica, on May 8th, under the presidency of the Right Hon. Lord Battersea, was an unqualified success, his Lordship's charming address on Gardens and Gardening, and his eloquent appeal for enhanced support for the Fund, resulting in a subscription list which amounted to the gratifying total of £605 18s. The committee have pleasure in recommending that Lord Battersea be this day elected a vice-president of the Fund.

It is with much gratification also, that the committee make the announcement that the Hon. W. F. D. Smith, M.P., has kindly consented to preside at the next festival, which has been arranged to take place at the Hotel Cecil on Tuesday, May 7th.

In view of the fact that the interest on Consols will be reduced at an early date, from 2½ per cent. to 2¼ per cent., the committee considered it desirable to secure a more remunerative investment, and a favourable opportunity offering, the committee are pleased to be able to report that the trustees have sold £7070 6s. 10d. of 2½ per cent. Consols for £7127 14s. 9d., and re-invested this sum in the purchase of £7210 15s. 10d. 3 per cent. London and County Consolidated Stock.

The committee with deep regret record the deaths during the year of Mr. John Fraser of Lea Bridge, and Mr. T. B. Haywood of Reigate, the former of whom, as auditor, and the latter, as treasurer, rendered the Fund most valuable services in its early days.

With keen regret the committee has to announce the retirement from their body of Mr. Richard Dean and Mr. Edwin G. Monro. The vacancies created by these resignations have been filled by the election of Mr. J. H. Witty, Highgate Cemetery, N., and Mr. J. W. Moorman of Victoria Park, E. By the resignation of Mr. Dean the Fund loses the valued services of one of its founders, who has been a member of the committee since its foundation, and one of the most regular attendants at its meetings, besides taking a most active part in securing contributions as local secretary for the Ealing district. Only his colleagues can fully appreciate what Mr. Dean has done for the Fund, but they ask the subscribers to recognise his services by according him a special vote of thanks.

The members of the committee who retire by rotation are Messrs. J. Asbee, Mr. G. H. Richards, Mr. G. Gordon, Mr. P. E. Kay, Mr. J. F. McLeod, Mr. T. A. Morris, Mr. T. Swales, and Mr. W. Roupell; and Messrs. Asbee, Richards, Gordon, Kay, McLeod, Morris, and Roupell, being eligible, offer themselves for re-election. Mr. William H. Cuthush, The Nurseries, Barnet, is nominated by the committee for the seat vacated by Mr. Swales, who does not seek re-election.

The committee again desire to record their grateful appreciation of the valued services rendered to the Fund by the treasurer, Mr. Sherwood, whose practical interest in its management, and most generous financial support, entitles him to the gratitude of every well wisher of the Charity.

To the auditors, Mr. Martin Rowan and Mr. P. Rudolph Barr, the committee also tender their warmest thanks for the good services they have again rendered in the audit of the accounts. Mr. Barr is the retiring auditor, and is nominated by the committee for re-election.

EXPENDITURE.		
By Allowances to orphans	£988 10 0	
„ Emma Sherwood memorial	13 0 0	
„ Grants in aid	32 2 6	
	£1033 12 6	
„ Annual dinner	157 15 7	
„ Secretary's salary	100 0 0	
„ Printing and posting list of subscribers	23 15 11	
„ Printing and stationery	12 17 10	
„ Annual general meeting and audits	18 0 4	
„ Hire of room for meetings	2 2 0	
„ Advertising	3 15 7	
„ Postages	9 16 9	
„ Bank charges	2 13 0	
„ Sundry expenses (petty cash)	3 4 3	
„ Fees on transferring stocks	11 2 9	
	63 12 6	
„ Balance		
Cash at bank	561 3 1	
Cash on deposit	500 0 0	
Cash in hand	112 1 2	
	1173 4 3	
	2552 0 9	
„ Purchase of £7240 15s. 10d. 3 per cent. London and County Consolidated Stock	7127 14 9	
	£9679 15 6	

In moving the adoption of the report and balance sheet Mr. May considered that the subscribers might well congratulate themselves on the excellent condition of affairs. He alluded to the anxious period through which we had passed, and thought it most satisfactory that the year of trouble had resulted in a better financial condition than in any previous year in the history of the institution. The chairman then read several letters from recipients of the charity, all of whom expressed their heartfelt thanks for the assistance that had been meted out to them. It must, he added in conclusion, be a source of gratification to the subscribers to know how much their generous efforts were appreciated. Mr. H. J. Jones seconded, and the motion was carried unanimously.

The election of officers was then proceeded with. Lord Battersea and Mr. Richard Dean, V.M.H., were placed upon the roll of vice-presidents; while Mr. N. N. Sherwood, treasurer, Mr. P. Rudolph Barr, auditor, and Mr. Brian Wynne, secretary, were re-elected. Mr. Wm. Cutbush was placed upon the committee vice Mr. T. Swales, who has resigned. Mr. H. B. May moved, and Mr. McLeod seconded, "That this meeting receives with regret the resignation of Mr. Richard Dean from the committee." The speaker eulogised the excellent work Mr. Dean had done on behalf of the institution from the time of its commencement until the present.

Declaration of the Poll.

The poll closed at 4.30, and a very few moments later Mr. W. Poupart on behalf of the scrutineers, read the result as follows:—Henry Chas. Bevis, 469; Archie Nicholas, 254; Evelyn O. Cooke, 234; Albert E. Grantham, 215; Mary Seaton, 155; Ethel E. Page, 151; Henry Hebblethwaite, 142; Victoria Lavinia Riddle, 131; Chas. Gregg, 129; Lawrence E. C. S. Seldon, 128; Rhoda C. Cooper, 124; John H. de Gruchy, 119; and Joyce L. Gayton, 118. The chairman then declared the first twelve in the list duly elected to the benefits of the institution. Two other candidates had applied since the list was published—namely, David Robertson, Edinburgh, and R. W. Parker, Bournemouth; these had been properly investigated and found to be thoroughly deserving. Mr. H. J. Veitch proposed, and Mr. G. Monro seconded, that as the funds of the Society were in such excellent state the two unsuccessful, J. H. de Gruchy and J. L. Gayton, and the two new candidates, D. Robertson and R. W. Parker, be placed upon the Fund. This having been supported by Mr. A. Dean, it was carried without dissent.

Mr. W. Roupell proposed that a vote of thanks be accorded to the chairman for presiding, and to the scrutineers for their services. Mr. A. Dean seconded this, and suggested that Mr. H. B. May, as a member of the Council of the Royal Horticultural Society, should use his influence to get a flower tent at the Temple Show for the benefit of the Royal Gardeners' Orphan Fund. Both the votes were carried by acclamation, and the proceedings closed.

Figs Under Glass.

As the earliest forced trees in pots have now a number of active roots and fully developed leaves, particular attention must be given to the watering, never allowing them to suffer for lack of moisture or supplying it excessively. Turves may be placed around the rims of the pots so as to form a dish, and rich compost given, say an inch thickness at a time, as the roots occupy it, and liquid manure in a weak tepid state, always in sufficient quantity to pass through the soil to the drainage. The atmosphere must be kept congenial, syringing the plants twice a day when the weather is fine, and damping the paths and walls when dull. A steady temperature of 60° at night, 5° more on mild, and falling below those degrees on cold nights, with 60° to 65° by day when cold and dull, and 10° to 15° rise with gleams of sun, will sustain the growth made, and it can be accelerated under the influence of light. Admit a little air at 70°, keeping it with sun heat at 75° to 80° to about midday, when, by diminishing the ventilation, the temperature may advance to 85° or 90°, closing sufficiently early to maintain a good heat whilst daylight lasts.

Stopping and tying must be attended to as growth advances, and overcrowding guarded against by rubbing off shoots for which there is not space for full exposure to the light. Pinch off the points of the shoots at the fifth leaf, if necessary, to secure a symmetrical habit, otherwise sturdy growths afford the finest fruits when unpinched. As the branches may not always be thinned without sacrificing some fruit, and cutting out when the sap is most active being inadvisable, tie such out, putting in the needful stakes. Any excess branches are best cut out when the fruit is gathered, and the growths ripen better in consequence.

The trees planted out and started at the new year are very promising, and the young Figs growing freely. They must be attended to for disbudding, exercising judgment as to what shoots to reserve for succession and stopping, always removing surplus in the bud state. Where there is room the leading shoots may be allowed to the extremity without stopping, and no more should be laid in than there is space for insuring full exposure to light, reserving a few growths where there is

room without interfering with the successional shoots, and pinching at the fifth leaf. These so-called spurs will give second crop Figs, and may be useful for displacing shoots cut out later, but it is not good practice to encourage spur growths. Mulch the borders with thoroughly decayed lumpy manure, and sprinkle on it a handful per square yard occasionally of bone superphosphate, to which has been added a fourth part of sulphate of potash. The mulching will attract the roots to the surface, where they can be easily supplied with nutrition as needed, supplying water as required, with liquid manure in the case of trees needing support through limited rooting area. A temperature of 55° to 60° at night, 60° to 65° by day artificially, 70° to 75° with a little sun, rising to 80° or 85° in bright weather is suitable.—GROWER.

Royal Horticultural Society.

Scientific Committee, February 12th.

Present: Dr. M. T. Masters (in the chair); Rev. W. Wilks, Messrs. Houston, Gordon, Douglas, Bennett, Rendle, Groom, Nicholson, Odell, O'Brien, Chapman, Hogg, Druery, Sutton, Bowles, Sanders, Elwes, Michael, Prof. Farmer, and Rev. G. Henslow, hon. sec.

In response to the invitation of the council of the R.H.S. to well-known men of science to join the Scientific Committee, with the view of reinstating it on a firm basis and of rendering it more useful, a large gathering of new and old members assembled after the annual meeting; and a very interesting discussion took place over the numerous exhibits sent, as well as upon a valuable *viva voce* abstract of his paper upon "Hybrid Conifers," by Dr. Masters, which will appear in full in the Journal. A cordial vote of thanks was given unanimously to Dr. Masters. Mr. Elwes observed that it would be of much assistance to the secretary if there were an unwritten rule that whoever contributed specimens, whether sent or brought to the meetings, should always accompany them with as full details as possible, for preservation in the reports, which would finally be recorded in the Journal. He also thought that when a valuable series of plants was shown, as on the present occasion by Mr. Lynch, the most important at least should be preserved, as they might not even be in the National Herbaria. With regard to notes, &c., on specimens sent, Mr. Henslow observed that as a rule something was usually said about them, but too often of a very meagre description. What, however, would enhance the value of the reports, would be for those who had observations to make at the meeting to send him a more complete account than is conveyed by the remarks which occur at the moment, if such should be thought desirable.

Hybrid Conifers.—Dr. Masters presented a paper on this subject in which he remarked on the rarity of hybrid Conifers in Nature in spite of the profusion of pollen that is formed. This rarity he attributed to the fact that, in the old world at least, the forests consist mainly of one species. Allusion was then made to the various hybrids in the genus *Pinus* described by Bock, Wettstein, and others, and to the so-called hybrid between *Juniperus nana* and *J. communis*, in reference to which the speaker showed specimens of both forms taken from the same bush. *Biota meldensis*, a supposed hybrid, is only a transitory stage of *Thuja orientalis*. The only two artificially produced hybrids known to the speaker are one raised by M. Croux between *Abies Pinsapo*, ♂, and *A. Nordmanniana*, ♀, and another raised by the late Henry de Vilmorin between *Abies cephalonica*, ♂, and *A. Pinsapo*, ♀. Specimens of these hybrids, by the courtesy of M. Croux and of M. P. de Vilmorin, were shown. M. de Vilmorin's hybrid *Abies* had produced cones, two of which were exhibited, together with those of the parent plants. Last year a single fertile seed was obtained, whose progress will be watched with interest. Details relating to the external features and internal anatomy of these hybrids are given at length in the paper, which will probably be published in the Journal of the Society. Specimens of the foliage, and of the cones of the parent plants and of the hybrids, were shown in illustration of the speaker's remarks.

Snowdrops diseased.—Mr. H. Lewis Jones, 61, Wimpole Street, sent some specimens of *Galanthus Elwesii*, with the following note:—"They were planted for three years. A top-dressing of manure was put over them in autumn. There was nothing wrong until this year, when a large number came up healthy, but the later members (about half of 500 in all) came up slowly, were yellowish later, and proved to be diseased. It seems to be spreading in both of my beds of bulbs. They are at the foot of a wall, with an easterly aspect. The soil is light, with a chalky subsoil." Professor Farmer undertook to investigate the nature of the disease, and specimens were also sent to Dr. W. G. Smith, Yorkshire College, Leeds.

Cypripedium malformed.—Mr. O'Brien exhibited a dimerous flower of *C. insigne*, and a pale yellow-green leaf from the same plant. He remarked that these two features had been constant on one and the same plant for three or four years. Though both peculiarities are not uncommon, it was unusual to find them on the same individual.

Galanthus, species.—Mr. Elwes showed flowers and foliage of *G. Elwesii*, and the so-named *G. Whittalli*, pointing out that the latter is only a local variety of the former with somewhat broader leaves and sepals, there being also a slight difference in the green colouring of the

petals. He observed that *G. Elwesi* is a great seeder, and apparently in consequence fails to produce bulbils for propagation; such is also Mr. Barr's experience.

Mistletoe, vars.—Mr. Burbidge sent several varieties from the Botanical Gardens of Trinity College, Dublin, with the following observations:—"I beg to send five varieties of *Viscum album*, all, as I think you will see, slightly different in habit, size of leaf, &c., as also in earliness or time of flowering. You will observe that in all cases but one the male plants have larger leaves than the females. Another point is peculiar about *Viscum* and its time of flowering—viz., the males in all cases flower a week or more earlier, or before the females, as is also the case in *Aucuba japonica* and some other dioecious plants. The male *Viscum* has foliage of a brighter green, while the females have leaves of a deeper and more sombre or sap-green colour. Amongst the female or fruiting plants of *Viscum* there is also considerable difference in size, colour, and time of ripening of the berries, as there is also in the time of opening of the male flowers, some individuals being weeks earlier in bloom than are others. The male *Viscum* has often in its young state on young Apple trees, or on the Mountain Ash, enormous leaves; but these become smaller as they begin to flower. The host plant, soil, aspect, &c., may affect the plants, but there is also a considerable range of seminal or inherent variation. Note the beautifully regular dichotomous growth of the branches, all the twigs lying in the same plane, and the half twist in the leaf at the base."

Plants from the Botanic Gardens, Cambridge.

Mr. R. Irwin Lynch contributed the following interesting plants and notes, for which a unanimous vote of thanks was recorded:—

Iris histrioides.—This species is not recorded in Sir M. Foster's book, and is probably of more recent introduction.

Iris stylosa.—A narrow form of this species, Mr. Elwes observed, was introduced by him in 1874 as *I. cretensis*, allied to *I. unguicularis*, exhibited by Mr. Bowles.

Galanthus Erithrae.—Not mentioned by Mr. Baker.

Hyacinthus ciliatus (azureus).

Narcissus Trimon.—Sir M. Foster's hybrid, between *N. Triandrus* and *N. monophyllus*. It is the earliest of all in flowering this year. The preceding are flowering out of doors.

Cyrtanthus lutescens.—Mr. O'Brien contributed the following remarks upon this plant:—"Some time in 1893, I think, Mr. J. Medley Wood of the Botanic Gardens, Durham, Natal, sent me a few small bulbs of a *Cyrtanthus*, afterwards described from a specimen which flowered with me by Mr. J. G. Baker in 'Gardeners' Chronicle,' June 9th, 1894, page 716, as *Cyrtanthus O'Brieni*. A reference to its interesting discovery on the Drakensberg I embodied in a note on Cape Flora ('Gardeners' Chronicle,' January 20th, 1900, page 33). Prior to that I had got *C. lutescens* from the same region, and either at the same time as *C. O'Brieni* or soon after, a rather showy *Cyrtanthus* (also from the same region), which Mr. Baker said was nearest to *C. Tucki*, though it was a much nearer approach to the showiest forms of *C. angustifolius* than the original *C. Tucki* (not too well figured in 'Gardeners' Chronicle,' August 6th, 1892, page 155), which, by crossing with *C. lutescens*, gave me *C. × Marian* ('Gardeners' Chronicle,' March 6th, 1897), in describing which I gave also some other experiences with *Cyrtanthus* which may or may not coincide with the experience of others. *Cyr. O'Brieni*, imported, was always delicate, and ultimately died. Before that event, I had crossed *C. lutescens* with the Drakensberg species, allied to *C. Tucki*, and on its flowering I was pleased to find that it was practically identical with the imported *C. O'Brieni*, but much freer growing. I think it points to the probability of the wild *Cyr. O'Brieni* being the result of a natural cross between the two plants, from which I got it at home. I think that view is strengthened by the fact that *Cyr. O'Brieni* of Natal is only found in the one unfrequented spot, and, so far as I can glean, only in a small patch. All the plants referred to are of the *Monella* section of *Cyrtanthus*. I may say, in justice to Mr. Baker, that the many points of resemblance between my *C. × Marian* and my *C. × O'Brieni* go far to prove the correctness of the name 'variety of *C. Tucki*' given by him."

Urceocharis Cibrani (Gard. Chron. September 23rd, 1899, page 239; fig. 86, page 251).—This is a bigener between *Eucharis grandiflora* and *Urceolina pendula*. Mr. Elwes called attention to the fact that the green tint characteristic of the *Urceolina* is only transitory in the hybrid, being present in the bud but not in the fully developed flower. Mr. O'Brien added the following observations on the point. "The point commented on applies in a more or less degree to most hybrids—viz., the varying evidence of one or other of the parents in the different stages of the growth of the flower. In the buds of the *Urceolina ×*, the yellow and green colours of *U. pendula* are strongly shown. So also is the form of the bud of *Urc.* As the flower matures these characters gradually get obliterated by the influence of *Eucharis grandiflora*, until, in the mature flower, the yellow colour and most of the green has departed, and the white of *Euch. grand.* asserts itself, the chief indication of *Urc.* being the ventricose form of the perianth. The vanishing of the colour, where white or some of the fainter tints are used on the one side is, I think, a natural consequence, as the colour of the coloured species is mostly surface colour."

Dioscorea sativa.—This bears tubers (one of which was sent) at every joint for a length of 40 feet. The tuber, which was globular, would send out a shoot 3 or 4 feet or more in length if kept indoors.

Kola acuminata.—A flowering shoot of this tree which bears the Kola nut. The calyx is orange coloured, the corolla is wanting, and the leaves are dimorphic, like that of the Fig, &c.

Aloe sp. nov.—This is said to agree with specimens collected in Somali-land. It was taken to the Nat. Hist. Mus. for identification.

Heterotoma lobelioides.—The Bird Plant of Mexico; the flower is remarkable for the receptacular tube extending as a beak in front, carrying two small sepals at the extremity, and the tubular corolla adherent to it throughout.

Cornus mas.—Flowering from the middle to the end of January, even on to March.

Hamamelis virginiana.—Wych Hazel; the nut is eaten in Virginia, and is regarded as a valuable medicine there.

Hardenbergia Comptoniana.—A very pretty climber for a greenhouse.

Siphocampylus lanceolatus.—A quite uncommon plant.

Distiactanthus scarlatinus.—A brilliant Bromeliad.

Crocus Imperati, *Chrysanthus* and *Sieberi*.—Winter-flowering species, now nearly over.

Disease in the Cherry Orchards of Kent.

A LEAF disease of Cherries has lately been reported from several orchards in the county of Kent. In the early summer it affects the leaves and fruit simultaneously, rendering the latter unfit for market. In autumn and winter its presence is easily detected. The diseased leaves remain attached to the branches as if the tree had been killed in the full vigour of growth, just as the withered leaves remain on a branch that has been severed from the stem. The fall of the leaf in autumn is a normal process carried out by the living leaf, which forms at the point of its attachment to the branch a cicatrix that secures when completed the easy severance of the leaf from the branch, leaving a clean scar. The speedy and fatal injury to the leaf caused by the fungus prevents the formation of this cicatrix, and the leaf remains attached to the tree, showing in black spots the fruits of the fungus.

A further striking characteristic of this disease is the shortening of the branches which bear the diseased leaves. The internodes or joints between the leaves of these branches have not been developed. The year's growth, which should have extended to a considerable length, measures less than an inch. The crowded leaf bases have each a healthy bud in the axil. The dwarfing of the branch is not due to any attack from a fungus, for no fungus is present in the tissues. The dwarfing is entirely due to the want of food, consequent on the early death of the leaf. That this is the case is confirmed by the fact that some of the dwarfed branches have produced in the following year vigorous normal shoots.

The disease has been spreading rapidly in Kent during the last few years. The varieties of Cherry trees that have been reported as specially liable are Waterloo, Bigarreau, Frogmore, Napoleon, Blackhearts, Clusters, and Eltons. Turks and Governor Woods have not as yet suffered much, and English and Flemish reds and May Dukes have not been attacked, though odd trees of other varieties, such as Bigarreau, growing among them have been diseased. In one orchard the disease attacked Waterloo first, soon spreading to other kinds, while at another place this variety had not been affected until last year, and then only the leaves had suffered, the fruit had not been damaged.

Professor Frank, of Berlin, has described a serious injury to Cherry trees which, there is little doubt, is the same as the disease that has attacked the Cherry orchards in Kent. The malady was first observed in the Cherry orchards of the Altenland on the lower Elbe in Germany about the year 1880. The diseased leaves remain on the tree all winter, and are intermixed with the new foliage of the following season. In spring he found on the dead leaves a fungus fruit that had not been present on them in autumn, a perithegium round at the base, about one-twelfth of an inch in diameter, tapering up into a pointed beak that projects from the under surface of the leaf. These perithecia contain the spores that re-infect the young leaves and fruit. The fungus had already been described by Auerswald under the name of *Gnomonia erythrostoma*. Frank traces the rapid spread of the disease in the Altenland to the overcrowding of fruit trees and to the presence of open ditches in the neighbourhood of the orchards causing too much moisture, and so presenting conditions favouring the growth of parasitic fungi. While such adverse conditions should be remedied, he recommends, as the only method of stamping out the disease, the gathering and burning of all diseased leaves, which, he considers, need not be attended with more difficulty than the yearly harvesting of the fruit. It is very important that Cherry growers should at once be made acquainted with the cause of the injury to the orchards and the remedy recommended by Frank, which is the destruction of the dead leaves. To be efficient this collecting and burning of the dead leaves must not be done in a solitary orchard here and there, but must be carried out throughout Kent.—W. CARRUTHERS (in the Report of the Royal Agricultural Society).



Hardy Fruit Garden.

Spring Planting.—Though autumn is the best period for planting all kinds of fruit trees and bushes, yet the work can be carried out in early spring or just before the buds begin to push. The time most suitable may be considered as extending from the middle of February to the end of March. During this period the soil in which the trees must be planted has had the opportunity of becoming dry and workable on the surface, without becoming pasty and adhering to boots and tools. This state of the soil is an essential condition for the well-being of the fruit trees, and every endeavour must be made to plant the trees and bushes only when the soil is in the condition described.

The preparation of the soil ought, if possible, to be carried out previously, so that there may be no delay at the proper moment. Should the ground require to be prepared it ought to be dug or trenched forthwith. Deep cultivation is always demanded by all classes of soil. Clayey and adhesive soil is rendered more porous and better drained, hence warmer, by deep cultivation, while light and sandy soils can only be best adapted for fruit growing by breaking up the subsoil to a fair depth. Soil that has not hitherto been deeply dug or trenched may have a fertile top spit, but a hungry subsoil. By no means must the latter be brought to the surface. The best method of deepening the soil while still retaining the spits in their original position is to bastard-trench the ground. Manuring ground which is in preparation for fruit tree planting is not essential, except for bush fruit and Strawberries. Rich soil is apt to cause excessive growth in Apples, Pears, and stone fruits. Light soil should be firmed before planting.

Trees and bushes on coming to hand for spring planting should be carefully laid-in in moist soil until the actual time of planting. The reason of this is the absolute necessity of preserving the roots from drying, which of course they soon will do if exposed to the atmosphere, and cold, cutting winds. Insert the trees in wide, shallow holes, and prune the ends of the roots smoothly, spreading out the roots to their full extent. Scatter a fine mixture of loam and wood ashes over them from the stem outwards. Avoid covering them more than a few inches deep. Place a stout stake to each tree that requires support, at the same time securing the trees firmly. Place a mulch of short manure over the roots.

Pruning Gooseberries.—Signs of activity will soon be apparent in the buds of Gooseberries, and pruning delayed until the present time ought to be carried out. Bushes in the open may have the branches and shoots thinned, leaving the trees as symmetrical in shape as possible, and not crowded with shoots. The centres of bushes require free removal of growths, while those at the base of the trees and touching or descending to the ground may be cut away. In thinning out crowded young growths, some of those for removal, instead of cutting them out entirely, may be shortened to form spurs. Gooseberries on walls or trellises may be pruned in a more formal manner. Main shoots 9 or 10 inches apart should be originated at the first and encouraged to extend until the space available is filled. The side shoots emanating from these each season must in summer be shortened to three pairs of leaves, and in winter, earlier, or at the present time, be further shortened to within an inch.

Pruning Currants.—Bush Red and White Currants, and as cordons on walls and trellises, must now have the pruning completed. The same system of pruning does for both. This consists of originating for each bush or cordon a limited number of branches. Spur in the side shoots to within an inch at the winter pruning, and shorten the leading shoots to 9 inches. In old bushes some of the exhausted branches must be annually removed, and growths from the base encouraged to take their place. If the bushes are so far worn out as not to produce suitable shoots, it will be better to destroy them and plant fresh young specimens, which, owing to their vigorous character, will soon develop into a fruitful and profitable condition.

Black Currants require different treatment. These fruits should only be grown as free bushes with or without short stems. Each season cut out the oldest branches and encourage abundance of new wood, not, however, to the extent of crowding. The shoots retained may be left full length.

Raspberry Treatment.—The old fruiting stems of Raspberries must be cut out close to the soil, and a selection of the best young canes retained, four to six to each stool is sufficient, or a foot apart if in lines. Shorten them to the tops of stakes or trellis. Mulch the soil liberally over the roots with rich manure. Newly planted Raspberry canes must be cut down to within 9 inches of the ground.

Heading Down Trees for Grafting.—Trees intended to be grafted with fresh varieties should now have the stems headed down to near the point where the grafts are to be inserted. In doing this care must be given to avoid splitting or injuring the bark.

Thinning Fruit Trees.—Standard fruit trees still containing crowded branches should have them well thinned out, especially in the centre and where they cross and interlace. Those branches that are taken out remove entirely, and do not leave any half shortened, as this will produce a greater thicket of wood than ever.

Applying Liquid Manure.—Soaking the soil at this season with liquid manure, extending the operation as far as the roots spread, is extremely beneficial to the roots of old established trees. It is not advisable to apply it to young or vigorous trees.

Fruit Forcing.

Cherry House.—If the temperature is maintained at 40° to 45° at night, and about 50° in the daytime, the trees rapidly unfold the buds when the weather is mild, and slowly but surely during cold weather such as it has been recently. Before the flowers expand it is desirable to fumigate the house, as aphides are very partial to the tender growths of Cherry trees, and are almost certain to be present, or by syringing the trees with an approved insecticide. Though a Cherry house, especially for early forcing, may only be found here and there throughout the country, no structure affords more acceptable fruit for dessert in the late spring or early summer months.

Cucumbers.—In order to maintain steady progress the plants require a temperature of 65° to 70° at night, 5° less in severe weather, 70° to 75° by day, rising to 85° or 90° with sun, closing early in the afternoon so as to run up or maintain a temperature of 90°, 95°, or 100°. Examine the plants in bearing once a week for the removal of bad leaves and exhausted growths, thinning the young shoots to prevent crowding, and cutting out old growths to allow of the training in of young. Stop two joints beyond the show for fruit, removing old and deformed fruits, as they do nothing but impoverish the plant. In securing the young shoots to the trellis do not tie them too tightly, but allow room for development. Plants that have been in bearing some time should have the surface soil removed, and previously warmed fresh soil added. Damp the pathways on bright mornings and early in the afternoon, keeping the evaporation troughs charged with liquid manure.

Peaches and Nectarines.—*Earliest Houses.*—The recent weather has not been favourable, yet the trees and crops look well. A night temperature of 50° to 55° and 60° to 65° by day being secured, with 5° to 10° advance from sun, and accompanied with judicious ventilation, which Peaches and Nectarines delight in, satisfactory progress has been made. When the growth is strong the whole of the foreright shoots may be taken off at once, and some of the side shoots pinched back to form spurs, but not on wood that will be removed after the fruit is gathered, retaining the best breaks from the base of the shoots now bearing. Trees that have set good crops of fruit should have the least promising removed where too abundant, especially those badly placed, and to help weakly trees apply liquid manure when moisture is required at the roots. Syringe the trees in the morning and afternoon with water of the same temperature as the house, and always sufficiently early to allow the foliage to become dry before night. On dull days omit the afternoon syringing, also the morning when cold and sunless, damping the paths and border instead, ventilate from 60°, increasing with the sun heat.

Second Early House.—Trees started at the new year have set, or nearly so, the fruit, and need to be syringed carefully after that is effected, so as to better enable them to cast off the remains of the blossom. A night temperature of 50° is safe in severe weather and 55° by day, 5° more in mild weather, with 10° to 15° rise from sun heat. Ventilation should be increased (a little being left on constantly) from 55°, and having it full at 65°, then the trees will form sturdy growths and leathery foliage capable of assimilating nutrition for the current crop, and making provision for a succeeding one. Disbud gradually and judiciously when the fruit is fairly swelling, and when begun follow it up day by day. Examine the inside border, and if dry afford a thorough supply of water, followed, if necessary, by liquid nourishment.

Trees Started in February.—In the house started at the beginning of this month the trees are all aglow with flowers. When the anthers show clear of the corollas cease syringing, maintaining a genial atmosphere by damping the paths and borders in the morning and afternoon of fine days. Turn the heat on in the morning to secure and maintain a temperature of 50° by day, ventilating from 55°, allowing an advance to 60° or 65°, with a free circulation of air, employing fire heat only at night to keep the temperature between 40° and 45°. Where there is a great show of blossom remove that on the under side of the shoots. Supply water to the border if in need of moisture. Fertilise the blossoms when fully expanded and the pollen is ripe.

Houses to Afford Ripe Fruit in Late July and Early August.—These planted with the choicest midseason varieties should be closed early in March. When the blossoms are retarded and will not keep from development there is nothing for it but to secure safety from frost after the buds show colour, syringing occasionally up to that, then ceasing, and instead of allowing the flowers to perish, as they certainly will do in a cold, close, moist atmosphere, maintain a temperature of 50° by day, and with ventilation from that point an advance may be made from sun heat to 60° or 65°, employing fire heat only at night to keep the temperature between 40° and 45°. This will insure a good set of fruit. Where the blossoms are superabundant remove those on the under side or back of the shoots, drawing the hand the reverse way of the growths.

See that there are no aphides, for cleanliness is all-important, fumigating if there be the least trace.

Late Houses.—Unheated houses with the roof-lights fixed, and not always provided with ample ventilators, are the worst possible in an early season, as the flowering is early, and spring frosts with damp and cold weather frequently prevail, so that the set is often better on walls with protection than under glass. With the roof-lights off the buds are dormant. Under fixed roofs ventilate freely, and where there is heat merely exclude frost. Heat is absolutely essential in cold districts, as the blossom is not safe from spring frosts, and the fruit does not ripen perfectly if the season be cold and sunless. The latest varieties cannot be depended upon to produce good fruit in cold localities without aid in backward seasons, and some of the latest sorts are noble in appearance, good in quality when the trees are well nourished, a little heat making a great difference in the fruit as regards its thorough ripening. Borders that have been exposed are thoroughly moistened through to the drainage; inside borders under fixed roofs should be examined, and if at all dry be well supplied with water.



All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Culture of Orchids (W. H. B.).—You will find replies to your questions respecting *Coclogyne cristata* and *Stanhopea grandiflora* on page 149.

Code of Judging (T. M.).—The code of judging is published by the Royal Horticultural Society. We have therefore forwarded your letter and stamps to the secretary, who will doubtless send the book in the course of a few days.

Cyclamen Leaves Crippled (Nemo).—The leaves are, or rather have been, infested by the "rust" pest, a minute creature not unlike a thrips, but of the mite family, and known as *Tarsanymus gerani*, because it attacks Ivy-leaved and other forms of *Pelargonium*, also *Gesneras* and *Gloxinias*, and is very malignant in its effects on the plants infested. It is very difficult to eradicate. The best treatment is to act as you propose—namely, burn all infested leaves, but this often means completely or nearly defoliating the plants, hence recourse is had to repressive measures, of which that you have adopted—the treatment with Lemon oil insecticide, frequently advertised in our columns—is one of the best, the solution being well applied, especially to the under side of the leaves. This treatment assuredly improves the plants, though slowly, and only needs persevering in to effect a clearance. Treatment with tobacco juice or nicotine liquid is the usually prescribed procedure, and is very effective, as it not only destroys the pests but acts as a preventive.

Pear Twigs Enlarged and Infested with Insect (L. N.).—The twigs are naturally enlarged at the point immediately below where the fruit has been produced. No insect is present, nor has there been any, in the twigs, but these are infested by mussel scale (*Mytilaspis pomorum*). To destroy this pest the tree may be dressed with a solution of 1 oz. caustic soda (98 per cent. purity), and 1 oz. commercial potash or pearlash to a gallon of water, and applying it at a temperature of 130° to 135°, preferably by means of a spraying apparatus, on a fine day when the bark is dry and the weather mild, also while the tree is quite dormant, or apply with a clean half-worn painter's sash brush, being careful to reach every part, and suffice that bark be just wetted, yet completely, without running down the twig, branch, or stem with the solution. At the latter part of May the tree should be syringed with an insecticide such as those advertised. The mulch of manure is likely to do more good than the paving with flints, and we also advise a top-dressing now of the following mixture:—Superphosphate of lime, nine parts; powdered saltpetre, five parts; nitrate of soda, seven parts; and ground gypsum, seven parts; mixed, applying 4 ozs. of the mixture per square yard from the stem of the tree outwards to a foot all round beyond the spread of the branches.

Spray of Plant to Name (Idem).—The spray certainly is not a Marguerite proper, though this term is applied to the Oxeye Daisies, *Pyrethrum* species, as well as to other species of *Chrysanthemum*, besides the true Marguerites or Paris Daisies, *C. frutescens* and vars., the common Oxeye Daisy of our fields, *C. leucanthemum*, being frequently called Marguerite. So far as we can form judgment from a spray your plant is the Great Oxeye, *Pyrethrum uliginosum*.

Flower and Fruit Farming (W. R. D.).—Write to the secretary of the Royal Agricultural Society of England, 13, Hanover Square, London, who will no doubt supply you with what you require.

Blanching Seakale (Somerset).—As the ashes you have always used for covering the Seakale for late use are objected to, and possibly earth or even cocoanut-fibre refuse would be equally so, and as you have got pots to avoid contact of any substance with Seakale, it would not be permissible to use ashes inside them, for that is the very thing objected to, and the pots in such case wholly unnecessary. The pots, however, alone will not answer unless you place earth around the bottom outside, and also use some material over the top opening, such as old sacking, before placing on the lid tightly so as to entirely exclude light, otherwise the heads of Seakale will be more or less purplish in colour, and not thoroughly blanched. We use long stable litter over the pots so as to cover them well over to the ground, and this, without giving any heat, secures perfect blanching, and in the north of England have had excellent produce in June.

Growing Passiflora edulis (G. H.).—The plants may be grown in large pots or tubs, but to have abundant crops of fruit they require planting in beds with the roots restricted. A border about 2 feet wide along the front of a house will support a plant on a trellis 12 feet across. Good drainage is necessary. A foot, or at most 18 inches depth of border, is ample. Turfy loam torn up roughly, three parts; leaf mould or old decayed cow manure, one part; drift or other sharp sand, half part; charcoal "nuts," half part, mixed, form a suitable compost. Do not plant too deeply, but firm the soil well about the ball. Train the growths to a trellis 1 foot from the glass, and so that every leaf will be fully exposed to light. As the plant produces many branches these must be thinned out, but no stopping is necessary, at least till a full crop of fruit is set. Watering must be moderate in the early stages of growth, as generous supplies result in sappy growths. After a good crop of fruit is set liquid manure assists the swelling, also surface dressings of turfy loam. A free use of the syringe is necessary to prevent and dislodge red spider and thrips, but during the flowering and setting of the fruits syringing must be discontinued, the flowers being kept dry. Ventilate the house rather freely, especially in the early part of the day, and look over the plant about midday for fertilising the blossoms. The fruit ripens about August, or earlier if growth is started early, and successively until October. At that time withholding water facilitates the ripening of the wood and induces rest, the plant being partly or wholly deciduous, and should be kept somewhat dry at the roots during winter. It winters safely in a temperature of 45°, this being contingent on a dry condition of the atmosphere and soil, with thoroughly ripened wood. In the growing season—February to October—it succeeds admirably in the temperature of a vinery. Pruning is best effected when the plant is commencing growth. The shoots can then be thinned and shortened, spurs cut in to one or two buds, old wood removed and young laid in, always pruning to firm, thoroughly ripened wood, for none other is healthy and fruitful.

Aotus villosa (W. Ruby).—This is an attractive, much-branched shrub that might be advantageously included in every collection of New Holland plants. The flowers are canary yellow, the standard streaked



AOTUS VILLOSA.

with crimson lines. It blooms in May and June. *A. gracillima* is a slender, graceful species with bright yellow flowers, which are produced in such profusion as to entirely hide the leaves, leaving the slender stems like long racemes of flowers. Both plants invariably delight those who see them in good condition. They succeed well in peat and loam in equal parts with a good portion of sand added.

Manure for Lawns (*J. C., Dorchester*).—A good stimulating manure for lawns may be prepared by mixing $\frac{1}{2}$ cwt. of superphosphate of lime, $\frac{1}{4}$ cwt. kainit, $\frac{1}{4}$ cwt. of nitrate of soda. It may be made more lasting in effect by using half of this mixture, and half of finely ground bones or bonemeal. A cheap rough stimulant to lawns may be made by mixing equal parts of basic slag and soot, using at the rate of 5 cwt. to the acre. Either of the above mixtures may be applied at the rate of 3 cwt. to the acre. Very hot lawns must not be too closely cut in summer.

Raspberry Pruning in Autumn or Spring (*Irish Fruit Grower*).—We have made a practice of cutting out the old canes as soon as convenient after the fruit has been gathered. We have also deferred cutting out the old canes until spring, and then shortening the young canes. The only advantage is that the old canes act as a sort of protection to the young during the winter, and any damage to these from severe frost, which usually occurs at the immature tops of the canes, can be seen, and the canes shortened to uninjured wood, whilst in a mild winter the top buds may have pushed, and the shortening to unpushed buds sometimes prevents injury to the growths from late spring frosts. What sap descends to the roots in winter we do not know, there not being any circulation of sap as occurs in the blood of animals, it being with plants a matter of diffusion and transference, and certainly sap descends to the roots, and is there reserved for use in the spring. It is a question of stored matter, and the right procedure is to get it into the canes as well as the rootstock, which are to supply the nutritive material in and for those fruiting in the following summer. This depends on the formation and maturation in the previous season, hence arises the necessity for cutting out the old canes so as to give them the fullest advantage of the late summer and autumn sun.

Stocks for Plums (*Idem*).—The practice of budding or grafting Victoria Plum on Myrobalan or Cherry Plum (*Prunus cerasifera*) stocks is of recent date, and mostly practised in the United States of America, where the summers are hotter than here, and the results are, on the whole, satisfactory there. In this country the Plums worked on that stock, especially on seedlings, grow too freely, hence are not as fruitful as those budded or grafted on the Mussel stock. The French, however, have selected Myrobalan stocks, and raised from cuttings, that induce a fruitful habit.

Names of Fruits (*A. C. K.*).—A very handsome specimen of Lane's Prince Albert. (*A. C. W.*).—No one could name the Pear with any degree of certainty. Had the specimens been half as large again we should have said the variety was Martin Sec, one of our oldest culinary Pears. The fruits may be from an overcropped and partially exhausted tree. (*Somerset*).—The Apples are long past their best; they more nearly resemble Wheeler's Russet than any we know.

Names of Plants (*O. R.*).—1, *Pteris umbrosa*; 2, *Cyrtomium falcatum*; 3, *Adiantum Pacotti*; 4, *Cheilanthes hirta*; 5, *Gymnogramma schizophylla*; 6, *Pteris longifolia*. (*G. K.*).—1, *Cattleya Trianae*, good form; 2, *Laelia alceps*; 3, *Cattleya Loddigesii*. (*T. J.*).—The leaf is that of the Silver Tree, *Leucadendron argenteum*. The "Mimosa" of the London and provincial markets is *Acacia dealbata*. (*J. C., Dorchester*).—1, *Dendrobium crassinode*; 2, *D. nobile Wallichianum*. (*W. A.*).—1, *Osmanthus fragrans*; 2, *Pieris japonica*; 3, *Veronica Andersoni variegata*; 4, *Libonia floribunda*; 5, *Boronia heterophylla*; 6, *Maranta argentea*. (*R. Ogston*).—*Cattleya Trianae*, pretty, but not a good form, flower deficient in colour and size.

Trade Catalogues Received.

Cooper, Taber & Co., Ltd., Southwark Street, London.—*Wholesale List of Agricultural Seeds.*

F. A. Haage, jun., Erfurt.—*Seeds.*

Johannes Rafn, Copenhagen, Denmark.—*Tree Seeds.*

Ant. Roczen & Son, Overveen, near Haarlem, Holland.—*Bulbs and Seeds.*

Vilmorin-Andrieux & Co., 4, Quai de la Megisserie, Paris.—*Chrysanthemums.*

W. Watson & Sons, Clontarf Nurseries, Dublin.—*Choice Plants.*

Native Guano Company.—We have received a bulky pamphlet embodying the numerous testimonials which have been volunteered by the customers of this firm during 1900, certifying to the excellence of their manure. These amount to some 500 in number, and relate to its use in the cultivation of almost every cereal and vegetable, of fruit trees, Grapes, Strawberries, Tomatoes, Cucumbers, Roses, and Chrysanthemums. Among the donors appear the names of many well-known in the horticultural world as cultivators, exhibitors, or writers, and if a good character counts for anything "Native Guano" should realise to the full every reasonable expectation of those who may be induced to give it a trial. Repeated orders of it, varying from six to eighteen, seem not to be uncommon.

Covent Garden Market.—February 20th.

Average Wholesale Prices.—Fruit.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, cooking, bush. ...	2	6	to	7	0	Lemons, case	9	0	to 16 0
„ Californian, case ...	7	6		9	6	Oranges, case	6	0	15 0
Apricots, Cape, box ...	8	0		10	0	Pears, crate	3	0	7 0
Chestnuts, bag, from ...	5	0		15	0	„ stewing, case of			
Cobnuts, doz. lb., best ...	4	0		5	0	„ 72 to 120	4	6	6 6
Grapes, black	0	6		2	6	„ Californian, case	15	0	18 0
„ Dutch, lb.	0	6		1	0	„ $\frac{1}{2}$ case	9	0	10 0
„ white, per lb. ...	1	6		5	0	Pines, St. Michael's, each	1	6	4 6

Average Wholesale Prices.—Vegetables.

	s.	d.	s.	d.		s.	d.	s.	d.		
Artichokes, green, doz. ...	2	6	to	3	6	Greens, bush. ...	0	6	to	1	0
„ Jerusalem, sieve	1	6		0	0	Herbs, bunch ...	0	2		0	0
Asparagus (Sprue Grass) ...	0	6		0	8	Leeks, bunch ...	0	1		0	0
„ English, 100 ...	7	0		0	0	Lettuce, doz. French ...	0	8		1	0
„ Giant, bundle ...	15	0		20	0	Mushrooms, forced, lb. ...	0	8		0	9
„ Spanish, bundle ...	1	6		1	9	Mustard and Cress, pmt. ...	0	2		0	0
„ Paris Green ...	5	0		6	0	Onions, Dutch, bag ...	3	6		0	0
Batavia, doz. ...	1	3		1	6	„ English, cwt. ...	5	0		0	0
Beans, French, per lb. ...	0	10		0	0	Parsley, doz. bnchs. ...	2	0		3	0
„ Jersey, per lb. ...	1	6		2	0	Potatoes, cwt. ...	3	0		7	0
Beet, red, doz. ...	0	6		0	0	Radishes, doz. ...	1	0		1	3
Broccoli, bush. ...	0	6		1	0	Rhubarb, doz. ...	1	2		1	5
Brussels Sprouts, sieve ...	1	0		2	0	Savoy, tally ...	4	0		5	0
Cabbages, tally ...	3	0		5	0	Scotch Kale, per bushel ...	0	6		1	3
Carrots, doz. bnch. ...	2	0		3	0	Seakale, best, doz. ...	12	0		0	0
Cauliflowers, doz. ...	1	6		3	0	„ 2nd, doz. ...	6	0		8	0
Celery, bundle ...	1	0		1	9	Shallots, lb. ...	0	2		0	3
Chicory, Belgian, lb. ...	0	4		0	0	Spinach, bush. ...	2	6		3	6
Corn Salad, strike ...	1	0		1	3	Turnips, doz. ...	2	0		3	0
Cucumbers, doz. ...	12	0		18	0	Turnip tops ...	0	9		1	0
Endive, doz. ...	1	6		0	0	Watercress, doz. ...	0	8		0	10

Average Wholesale Prices.—Cut Flowers

	s.	d.	s.	d.		s.	d.	s.	d.	
Asparagus, Fern, bunch	1	6	to	2	6	Maidenhair Fern, dozen				
Carnations, 12 blooms ...	2	0	3	0	bunches... ..	4	0	to	8	0
Cattleyas, doz.... ..	10	0	18	0	Mimosas, bnch.	1	0	1	6	
Daffodils, doz.... ..	6	0	9	0	Odontoglossums	6	0	8	0	
Eucharis, doz.	4	0	6	0	Poinsettias, doz. blooms .	8	0	12	0	
Gardenias, doz.	3	0	5	0	Roses Tea, white, doz.	1	0	3	0	
Geranium, scarlet, doz.					„ yellow, doz. (Perles)	2	0	4	0	
bunches... ..	8	0	12	0	„ red, doz.	6	0	10	0	
Hyacinths, doz.	4	0	8	0	„ Catherine Mermet,					
Lilium lancifolium album	3	0	5	0	doz.	6	0	12	0	
„ „ rubrum	3	0	5	0	Smilax, bunch... ..	3	0	5	0	
„ various... ..	4	0	8	0	Tulips, yellow, doz. bnchs.	6	0	9	0	
Lilac, white, bunch, ...	3	0	5	0	„ white „ „	8	0	10	0	
Lily of the Valley, 12 bun.	8	0	15	0	„ red „ „	6	0	8	0	

Average Wholesale Prices.—Plants in Pots

	s.	d.	s.	d.		s.	d.	s.	d.		
Acers, doz.	12	0	to	24	0	Foliage plants, var., each	1	0	to	5	0
Arbor Vitæ, var., doz. ...	6	0		36	0	Geraniums, scarlet, doz.	6	0		10	0
Aspidistra, doz.	18	0		36	0	„ pink, doz.	8	0		10	0
Aspidistra, specimen ...	15	0		20	0	Hydrangeas, white, each	2	6		5	0
Azaleas, various, each ...	2	6		5	0	„ pink, doz.	12	0		15	6
Boninas, doz.	20	0		24	0	„ paniculata, each	1	0		3	0
Cannas, doz.	18	0		0	0	Lilium Harrisii, doz. ...	8	0		18	0
Crotons, doz.	18	0		30	0	Lycopodiums, doz.	3	0		6	0
Dracæna, var., doz.	12	0		30	0	Marguerite Daisy, doz. ...	8	0		10	0
Dracæna, viridis, doz. ...	9	0		18	0	Mignonette, doz.	8	0		12	0
Erica, various, doz.	8	0		18	0	Myrtles, doz.	6	0		9	0
Euonymus, var., doz.	6	0		18	0	Palms, in var., each ...	1	0		15	0
Evergreens, var., doz. ...	4	0		18	0	„ specimens	21	0		63	0
Ferns, var., doz.	4	0		18	0	Roses, doz.	6	0		18	0
„ small, 100	4	0		8	0	Stocks, doz.	8	0		12	0
Ficus elastica, each ...	1	6		7	6						



A Good Hay Crop.

TAKING our heading as a text, we might, to follow the line of eminent divines, divide the subject into two heads. The first important point is to secure a good growth of grass; the second, equally important, is to turn that grass into good hay. Naturally, the land and management thereof are the factors in the first case; and, in the second, we might say, everything depends upon a cause outside our control—namely, the weather. But a wise man will bear in mind the fact that weather can in some degree be circumvented;

there need be no unnecessary delay in the various operations, and it is well to hold back a bit in case of a week or ten days of absolutely unsettled weather.

Now for the land. There is some that is essentially fitted for the production of good grass that needs little attention; there is another class that needs a stimulant; and there is yet another class where no one but a fool would ever expect to see good pasture. There is plenty of land in England that will not pay for the labour and pains expended on it, and it is these absolutely barren acres that are taken into account by some of our would-be advisers who are for ever preaching of our supineness and stupidity in not utilising all the acreage at our command.

We are writing in February, and it is high time to be thinking of preparation, to insure, as far as in our power lies, a good hay time. Many farmers appear to think that it is only arable land that needs special food. No greater mistake was ever made. It perhaps does not occur to all our readers that weeds may exist to an appreciable extent among grass. What is wanted in grass is a good fodder plant, not a weed, and manures have this property, that they promote the growth of the fodder plant, and thus smother the weed. Then, again, the different manurial dressings are conducive to the growth of different useful plants. This was most conclusively proved by the experiments on the park at Rothamstead by the late Sir J. B. Lawes. This question of a manuring is a wide one, and, we may add, an expensive one, but as there is no food which can, or will, take the place of hay, the money (though possibly grudged at the time) will be well spent.

There is one dressing which is most effectual. Though not an actual manure its virtues are great; we refer to compost. On most holdings there is material enough and to spare to make such a valuable heap; it is only a question of carts and horses and men. We know of a wonderful heap composed of lime, the decayed turf from the parish roads, the levelled bank, the accumulated dyke and pond cleanings, and various forms of vegetable refuse. Such a heap is a veritable gold mine, especially where herbage is coarse. This must be applied during the winter, and should Clovers be scarce a dressing of lime will be of the greatest benefit (provided there is none or little in the compost).

It should be borne in mind that light land requires more encouragement than the heavier soils, which are naturally predisposed to the growth of good herbage. A well manured light or medium land crop will be less bulky, but of finer quality and proportionately of more value than the heavy coarse produce of a lush water meadow.

There is a good deal of grass land that suffers from being waterlogged. There is no hope of having a really fine crop till draining has been done. This, too, is an expensive business, and can never, from the nature of things, become much cheaper. Grass does not need its feet in water; it is not an aquatic plant. Are we clear here? All plant life must have moisture, but not stagnant moisture—that's the difference. An unpractised eye will easily discern the need for drainage—tufts of rushes and other water-loving plants all tell the tale of perpetual dampness.

In process of time land left to itself will lose certain of the more delicate grasses. It is the case of the weakest to the wall—the choice bits are closely eaten, and therefore never reproduce themselves in seed. Here art must step in, and if on careful analysis there appears to be a lack of variety of grasses on a given area it is well to try what a little renovation will do by means of re-seeding. The nearest seedsman will probably be able at once to suggest a mixture suitable to the soil, and the money spent in thus re-seeding will bring a good return. This is work that should be done very soon. The land must be well harrowed, and the seeds sown with a dressing of compost.

Grazing stock do not distribute the manure evenly—this is evident to all—therefore advantage should be taken of a fine spring day when the turf is fairly dry to roll and harrow all grass land. The benefit is obvious, and also twofold. A grasscutter has to be set low, and any inequalities play havoc with the fingers. July is often a busy month with hay-getting and the Turnip crop, but time should be found to chain-harrow all grass land.

In treating poor thin mosaic land we shall need a liberal allowance of artificials, and on every acre we should apply 1 cwt. nitrate of soda with 2 cwt. superphosphate. It is not wisdom to use nitrate where the herbage is coarse, for it encourages rankness, but manures containing phosphate of lime do good anywhere. A well-manured piece of grass in good heart does not suffer so seriously if we have a dry spring, is not so liable to be burnt up. We often wish we could reverse the seasons; the showers that fall on what ought to be the new-made hay would be most welcome earlier, and the unnatural heat and drought of the spring could be better borne later. These things we cannot control, but by liberal treatment and generous diet we enable the patient to pull through the trying season with less actual loss.

There is another question that may occur to the mind of the

inquirer, and it is this. At what time must the grass cease to be grazed? Well, the time varies according to the nature of the land. Where the land is light the field should be cleared and the gate shut as soon as March is out. Where the land is heavy stock will do no harm if left till middle of May. Where the herbage is coarse or uneven, the longer the stock is there the better, as then the hay crop will be of more regular growth.

The hay being grown, and we hope well grown, then comes the anxious time. "To cut or not to cut." It is all very well to talk of hay-making, and sometimes sunshine is not half so necessary or desirable as wind. A brilliant sunny day takes the nature out of the grass, burns it up in fact, whereas a wind makes hay, and at the same time allows it to retain its most valuable properties. Windy dull weather is the best for hay-making. When is the grass quite ready for the reaper? That depends entirely on the state of the seed. Grass may be over-ripe as well as under-ripe. Over-ripeness is when the seed is shaking. Cut, if possible, just before the seed is ready to shake.

We hear of more heated haystacks in a fine season than in a wet one. The cause is obvious. We can all see the rain pouring down, and we know for a fact that the grass is soaking, but we do not all appreciate the fact that even in a dry time there is much natural moisture in the stalks, and that must have time to evaporate. Even when apparently dry it will be found the hay will give again like a woollen garment placed before the fire. There is a happy mean, and the knowledge when that happy mean is reached cannot be taught by a book, it comes of much practice and observation.

We are great advocates for the turn-over haymaker, and we are always glad when the stuff gets into cock, especially if there is a doubtful look about the sky. A good farmer will tell in a moment whether hay is fit to lead or not by the smell and the handling; this also comes of close observation. If there be much Clover in the hay, and that Clover is breakable, it is a sure sign that all is right. If, on the other hand, the Clover stems feel damp and juicy, a little more time should be allowed. It is well, if it can be done, to make a good stack bottom, say of Wheat straw, before beginning to build the stack, it will save from spoiling by damp of a very considerable portion at the bottom.

We need not add that the thatching of the stack when built must be well and thoroughly done so as to avoid damage by rain and wind. Remember grass suffers less from drenching rain while still uncut than when laid in swathe, and a warm rain is more destructive of quality than a cold one. The great reason for cutting grass before the seed is quite ripe is that when the seed is fairly ripened, the plant having fulfilled its mission, begins at once to deteriorate.

Work on the Home Farm.

Passing through a neighbouring parish a day or two ago we observed a number of lambs apparently two or three weeks old; they looked very well and strong, and quite unaffected by a fairly strong blizzard which was raging at the time. We had 12° of frost the last two nights, and the land is harder than it has been this winter, though ploughing is still possible. The previous snow had all melted before this frost came, and there is now barely enough to whiten the fields. If, as seems likely, we are yet to have some winter, a further covering of snow would be desirable. A large flock of redwings was noticed to-day, the first this winter, and as these birds are invariably the harbingers of wintry weather, we fear that the growing springtime we long for is not yet very near.

Industrial depression is quickly making itself felt in the country. The stoppage of a few blast furnaces, and of work in the ironstone mines, is letting loose a number of men who seek employment on the land. They will be very welcome if they will be satisfied with the wages which farmers can afford to pay.

Where there is manure still to get out there is plenty of employment for horses, and spare men are still busy amongst the fences, where more is being done this year than usual, not because it is convenient to do it, but because the work must be done. Roadside hedges which are kept closely and ornamentally trimmed year by year, will die away in course of time, unless they are occasionally cut right down and allowed to grow for three or four years with nothing but a siding up. We constantly see low hedges that look very neat and tidy, but which are in a state of decay, and would not make adequate sheep fences were it not for the hundreds of stakes which are annually put into them.

We have not seen a drill at work yet, though we heard of one during the last thaw drilling Oats; the owners thereof must have shown more haste than discretion, but some farmers like to be able to say that they are before their neighbours in the same spirit as Members of Parliament at the opening of a session.

When screw cattle are seen entering a dealer's yard in the evening, and slaughtering takes place after midnight, we wonder where the meat goes to. To make sausages, we are told, but how about the meat inspector? Perhaps this stuff is put on the market as foreign, and people will eat anything if it comes from abroad.

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Journal of Horticulture.

THURSDAY, FEBRUARY 28, 1901.

Dwarfing Stocks.

JUDGING from what has come under my observation during the past four years in various parts of the country we may easily err in the direction of planting too many fruit trees worked on dwarfing stocks. Many failures, partial or complete, are to be met with for which the stocks are largely responsible, and I would specially draw the attention of nurserymen to this fact. The surface, fibrous-rooting stocks, notably the Quince for Pears, and Paradise Apple for Apples, naturally have the effect of promoting a sturdy, short-jointed, floriferous growth of the varieties worked on to them, but what of the size and longevity of the trees? The reply to this question may be altogether satisfactory in cases where the soil is naturally deep, sufficiently fertile, and retentive of moisture without being unduly so; but when we take cognisance of the same classes of trees on shallower, hotter, brashy, or gravelly soils a very different complexion is put upon the matter. Under these last named conditions we find the trees, as a rule, in anything but a satisfactory state. They are badly stunted in growth, much cankered in places, and producing crops largely consisting of undersized fruit. The surface rooting habit of the stocks has in these cases proved a "delusion and a snare."

Apples on the natural stock, which may be either seedling Apple or the Crab, and Pears on the wild Pear, doubtless root too deeply, the trees grow too strongly, and are not sufficiently early productive for these hurrying scurrying times, but all the same they are the best for shallow soils on a gravelly or brashy foundation. Those who have not had any experience with these classes of soils will probably make reply, mentally or otherwise, to the effect that all one has to do when dealing with shallow, hot soils is to top-dress and mulch annually with strawy manure; but this is easier to advise than to carry out in very many gardens. Moreover,

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it has been tried for several years in succession in gardens known to me without having the effect of stimulating top growth to any marked extent, the trees being incapable of making an effort to throw off canker.

In marked contrast to these I can point to trees on the natural stocks growing comparatively luxuriantly alongside, which in all favourable seasons bear good crops of fruit, and apparently remain unaffected by the trying summers they have recently experienced. Yet if we dive below the surface very few root fibres are found, but a number of strong roots have spread out widely and deeply in search of the moisture evidently needed. Moral, on shallow hot soils plant trees on natural stocks.

There is another way out of the difficulty that may be offered, and it is this:—Plant trees worked on dwarfing stocks sufficiently deeply to quite bury the stocks and point of union with the scion. This is to a certain extent sound advice, only, unfortunately, nurserymen have taken to budding or grafting their stocks at a greater height than formerly; at least, such is my impression. Now, it is not an easy matter in many instances to sink the stems sufficiently deeply without much excavation, removal of stones, and the substitution of fresh soil, and burying the roots thus deeply appears to be both unnatural and unwise. It has to be done, though, or the evils indicated early in this article will inevitably result. As it happens if that portion of the stems formed by the stocks is unduly exposed it makes much slower progress than the variety of Apple or Pear, as the case may be, worked on it, and it quickly becomes too dwarfing in its effect. Especially is this the case with the Quince and French Paradise stocks. Unfortunately for buyers of trees, far too many raised in France and other continental countries reach this country, and seeing that everything "English" is tabooed by our continental contemporaries (except our money), the chances are French rather than English Paradise stocks are used by them. We shall be told, perhaps, that the remedy rests with English planters, who are warned (I have done it hundreds of times) against purchasing trees sold in the open markets of our provincial towns.

To return to the planting. If deeply planted and kept sufficiently moist by either mulchings of strawy manure or substitutes, these dwarfing stocks emit roots freely right up to the point of union with the scions, the latter also not infrequently developing, so that in time we have what is tantamount to an own-root tree. When this takes place the character of the tree's top growth is also changed greatly for the better. Nor will this freer growth militate against the free bearing habit of the tree, always provided the over-zealous pruner is kept away from it. If we want toy trees then avoid high culture, but I fail to see any sense in growing large numbers of trees, each producing a few dozen fruit, when a quarter the number of more naturally grown trees would produce a far greater weight of fruit.

Deep planting of trees on dwarfing stocks has, to my knowledge, coupled with rather hard pruning, including cutting away some of the worst affected parts, proved a certain remedy for stunted, cankerous growth; and another way out of the difficulty in the case of trees already established is to bank up soil and manure round the stems to the extent of burying the swollen base of the tree. If these top-dressings are kept moist they will cause the buried stems to emit roots freely, and the roots being kept active and spreading by means of further additions of soil and mulchings of strawy manure, a change for the better in the top growth will soon be apparent. This is an experiment I would commend to the notice of some of my readers who have not as yet become acquainted with the by no means original ideas just presented to them.

But there are other dwarfing stocks that may eventually prove a source of worry and loss to fruit growers. Any kind of Plum stock seems good enough from a nurseryman's point of view for Apricots, Peaches, Nectarines, and Plums. Some of them, notably the Brompton, if I am rightly informed, swell evenly, keeping pace with the rest of the tree. But what of those miserably stunted stocks and great swollen bases of the varieties worked on to them? What gardener has not been vexed with this occurrence? Slicing the stems so as to

cause the formation of new layers of bark and sap vessels answers fairly well in some cases, relieving the block, so to speak, but I can point to numbers of stocks that have not responded to the knife in this respect.

Last year I was asked by a small nurseryman to express an opinion on the Myrobella Plum as a stock for Peaches and Nectarines, and at the time I failed to see why it should not answer admirably. Since then I have seen large fruiting trees of this inferior Plum and observed that they were not nearly as robust as other choicer varieties of Plums trained against the same wall, and I have also looked closely into the behaviour of young Peach and Nectarine trees that we accidentally discovered were budded on the Myrobalan stock. To all appearances this stock, so dear to the heart of nurserymen because so easily propagated by cuttings, will eventually prove most disappointing, as already they are failing to keep pace with the rest of the stem, and trouble is in store. No doubt Plum stocks, especially the free-rooting Myrobalan, would emit roots freely if buried, but the greater part of these are worked too high, and the thought of promoting deep root action is horrifying to the older gardeners who have had previous experience of the "yellows" in Peach and Nectarine trees.
—W. IGGULDEN.

Eranthemum pulchellum.

BLUE flowers are scarce amongst stove plants, hence are always acceptable, more especially those which flower during the winter months, and one of the most useful is this free-flowering, easily grown plant. I have plants in 4-inch pots not more than from 4 to 6 inches in height, nearly covered with flowers, and yet they have the healthiest foliage, and are useful alike for cutting from and for decorative purposes.

I usually cut the old plants, the shoots of the previous year, to within one or two joints of their origin, keeping the plants rather dry for a fortnight after flowering. The plants start freely and are potted when the young shoots are 2 or 3 inches in length. The roots are considerably reduced, and the plants are returned to the same size of pot, and are given a larger size when the plants have filled the pots with roots. A light airy position is afforded, and if this cannot be given in a house the plants do equally well in a cold pit, admitting air moderately so as to keep up a good temperature; it is only right to say the plants do better than those grown at a distance from the glass in a warm house, the growth being stouter, shorter-jointed, and the flowering is proportionately finer. From about the middle of June to the middle of September they are as well in a cold pit as in a stove.

If bushy plants are wanted the growths may be stopped to two joints; or the shoots may be regulated by tying them to stakes as they advance. The unstopped plants flower earlier than the stopped ones. In April, or when the plants are cut down, cuttings may be taken of shoots with two joints and the growing point, and these inserted in sandy soil up to the second pair of leaves will root quickly in a gentle bottom heat. They should be potted singly when rooted, and kept in heat until established, and may be removed to a cold frame in June or July, shifting at that time into 5-inch or 6-inch pots. They will grow compactly, and flower well in early winter in a cool stove or warm greenhouse, being removed thither by the middle of September.

Cuttings taken in June, inserted round the sides of a pot in sandy soil and over a hotbed will speedily be well rooted, and may then be placed singly into 4-inch pots, and placed in a cold frame kept close and shaded until the potting is recovered from, and then have moderate ventilation, and be kept duly watered, the object being to keep them dwarf by close proximity to the glass and at a temperature only productive of slow growth. By the middle of September remove them to a light airy position in a cool stove or warm greenhouse, and in January or February will be a reward of massive heads of blue flowers. Turfy loam with a third of leaf soil, or preferably a fourth of old cow manure, will grow them well. Weak liquid manure given at every alternate watering after the pots are filled with roots will be found highly beneficial.—G. F.



Cypripedium T. W. Bond, Coundon Court Variety.

THIS strikingly handsome variety of *Cypripedium* T. W. Bond was exhibited at the Drill Hall on Feb. 12th by Mr. J. Collier, gardener to George Singer, Esq., Coundon Court, Coventry, when it was recommended an award of merit by the Orchid Committee of the Royal Horticultural Society. The flower is of the noblest proportions, and was immensely admired by the many specialists present on the occasion indicated. The dorsal sepal has a white margin, the basal colour being green, almost wholly obscured by minute brown-black spots. The lower half of the petals is greenish again almost obscured by spots; the upper half is rose with a purple suffusion. The pouch is pale claret. The type T. W. Bond resulted from a cross between *C. Swannianum* and *C. hirsutissimum*.

Seasonable Notes.

THOSE who have no Orchid house proper, but who grow a few Orchids amongst the occupants of the stove and other houses, should be careful to select those most easily managed under such conditions. *Dendrobium nobile* and other

Dendrobiums are easily grown where plenty of heat is at command, but their growths must be thoroughly ripened afterwards, or they will not long remain in good health. As the young growth is often advanced at the time of flowering it is not wise to subject them to room treatment too

long. *Coelogyne cristata* adapts itself to the above conditions remarkably well. We have plants that have been in the drawing-room for three weeks, when in flower, for the last four years without any apparent harm. During its season of growth it should have frequent supplies of liquid manure, and fine pseudo-bulbs will be the result. *Zygopetalum Mackayi* does well with a little loam added to the peat and sphagnum. It should have abundance of water and feeding in preference to too often potting. *Cymbidium Lowianum* is an Orchid that everyone with a house that can be kept moderately warm should have. Good turfy yellow loam, intermixed with sphagnum moss and a few broken potsherds, with a sprinkling of silver sand and liberal treatment in the matter of watering, is what this plant delights in. Both the two last do well as room plants if not kept in them too long.—R. E.

Phaius tuberosus.

The appearance of a plant of what our botanists consider to be the true *Phaius tuberosus* at the recent meeting of the Royal Horticultural Society was something of a surprise to orchidists generally, and though not doubting for a moment that Mr. Rolfe before deciding its position gave the matter his consideration most fully, yet a feeling of regret that we have henceforward to look upon our old friend

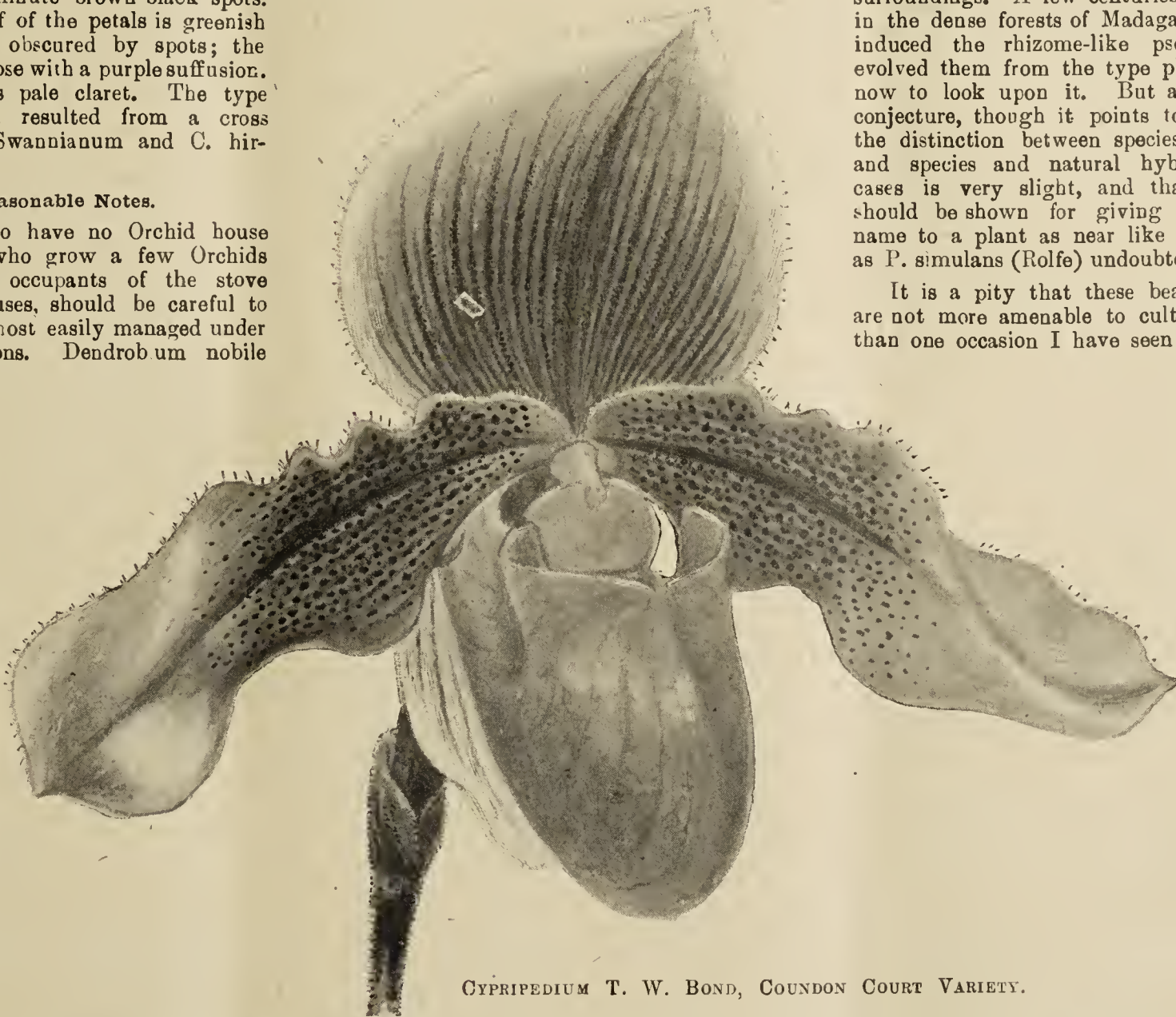
under a new name was apparent. With the resources that Mr. Rolfe has at his command there is no room for doubt that the plant exhibited is the true species named by Blume from herbarium specimens, and (presumably) identical with *Bletia tuberculosa* of Sprengel.

But would it not be possible, supposing that the newcomer has the priority in nomenclature, to reduce the old form to a variety of *P. tuberosus*? It is different in habit, of course, but then so is *Oncidium tigrinum* and *O. tigrinum splendidum*, and the difference here is very much more marked than with the *Phaius* in question. It is in no cavilling spirit that I write this, nor in any way deprecatory of the excellent work of those I am not even qualified to judge. I am writing simply as one interested in Orchids. And the question, as I look at it is—Is there sufficient distinction between the flowers to warrant the renaming of the old species as we know it as distinct and not as a variety?

The difference in habit may, of course, have been brought about by local conditions of climate and other surroundings. A few centuries, more or less, in the dense forests of Madagascar may have induced the rhizome-like pseudo-bulbs, or evolved them from the type plant as we are now to look upon it. But all this is mere conjecture, though it points to the fact that the distinction between species and varieties, and species and natural hybrids, in many cases is very slight, and that good reason should be shown for giving a new specific name to a plant as near like *P. tuberosus* as *P. simulans* (Rolfe) undoubtedly is.

It is a pity that these beautiful Orchids are not more amenable to culture. On more than one occasion I have seen plants that at

first appear similar in all respects, after growing side by side for a time do quite differently. One will thrive while its neighbour will gradually waste away; yet they both receive exactly the same treatment. The most likely place for it is in a warm house, well shaded, yet not far from the light. Some of the best plants I have seen were grown with



CYPRIPEDIUM T. W. BOND, COUNDON COURT VARIETY.

Phalaenopsis, and allowed ample room at the roots. A rough and very open compost is suitable, and it is imperative that the leaves are kept free of thrips, its worst insect enemy.

Odontoglossum Kramerii album.

This is one of the most charming of small habited *Odontoglossums*, and fortunately it is much more plentiful now than formerly. It is a true albino, having lost the whole of the purple tint as seen in the type. A spike with about three flowers upon it makes a pretty buttonhole. Under cultivation it will be found to do best in rather small but well drained pans with a thin compost consisting of equal parts of peat fibre and moss. An intermediate house suits it better than the *Odontoglossum* house, and it should be suspended near the glass and not too heavily shaded.—H. R. R.

Fruit—Preserved but Fresh.—A process known as Lawton's has been invented for the preservation of fruit in a sterilised atmosphere, by which, at or before maturity, it can be stored without suffering deterioration. By means of a fan air is forced through a stove containing red-hot coke, whereby the oxygen is consumed and the germs or animalculæ are destroyed. The gases are then filtered and cooled.

Mostly Irish.

A THIN, white pall laid lightly o'er ground and greensward as the momentous month of January glided away. It was the first touch of winter on the seaboard of Dublin where, until then, Nasturtiums and similar tender plants had lingered on sufferance. The mildness of the season has been remarkable, albeit mild winters are not phenomenal in our generation, but wet and wind have been its accompaniments. The new century has not apparently dawned propitiously upon us gardeners, for much of that work which the approach of spring begets an anxiety to be wrestling with will, as far as present appearances go, have to be grappled with later on. Such things, however, seem in touch with the times, as the heart of the Empire throbs painfully at its irreparable loss. Yet the deep chill which spread so far on the setting of the Victorian era is succeeded by a rich afterglow which will long remain to show what that pregnant period has done for gardeners and gardening.

Domestic servants! When the coming census paper arrives where shall we be? The welfare of gardening and gardeners goes hand in hand, and granted that such is the case, with due recognition of the progress that has obtained, the greater appears to be the anomaly that men who, by their intelligence and devotion, have advanced it and themselves to the present position are inscribed on the statute book as domestic servants. Who will be bold enough to initiate an agitation which shall for once and for all sever the red tape which binds us to footmen and housemaids? Let there be not, however, the shadow of a reflection upon *bona fide* domestic servants. These are most excellent people in their way, but their ways are not our ways, and we ought to have parted name, as we have company, long ago. With our legislators presumably this matter is a kind of "as it was in the beginning, is now, and ever shall be," unless one whose love of country is equalled by his love of gardening will take it up, now—when the new year marks a new century and the accession of his Majesty Edward VII. Long live the King! and all honour to the man who will redress the gardener's grievance.

It is a matter for regret that the Royal Horticultural Society of Ireland, whose shows are confined to the Irish metropolis, is in a bad way—starts the new era with a balance to the bad. Is it that the society in leaning too much upon its traditions of the past is slow to embrace that practical progressiveness which rules the present? There is more than a suspicion that such is the case, for in spite of much pre-puffing by the press as a show approaches, with after refreshers on the morn of each eventful day, provided by perambulating "sandwich" men, a pleasure loving public stands aloof. Why is it so? The man in the street says, "Those flower-show folks ask too much and give too little." Possibly he is right. As for gardeners, *bona fide* gardeners, between whom and the public no pocket distinction is made by the society, they are prone to take purloined peeps by making strategical entry with the exhibitors. Perhaps if the premier horticultural society of Ireland would put aside past prestige, and abolish prohibitive prices, lure the public generally by all the legitimate means which have given happy results elsewhere, as well as encourage the gardener and his "missus" to come at a reasonable hour by admitting them at a reasonable rate, there would be less occasion for passing round the hat to atone for a deficit at the gate. However, the powers that be are facing unpleasant facts, so knowledge comes if wisdom lingers.

A dismal city and a dull people might be the inference drawn from the above remarks, or, at least, that we, Irish, do not appreciate the beautiful and interesting as represented by a flower show. Yet those who know us best would least think so. Flowers appeal to all. There is a touching story of a little street Arab who on seeing the placards in Grafton Street, Dublin (placards are placed flat on the ground here) announcing the Queen's death, purchased a bunch of Violets from a flower seller at hand with what was probably his last penny, and reverently laid them on the word "Queen." Thousands of floral offerings have appropriately expressed that intense affection felt for Victoria, the Well Beloved, and some of the most exquisite designs and workmanship were contributed by Ireland, but the simple act of a city waif makes that humble posy rank with the richest and rarest of them all. To the lasting honour of that warm-hearted Irish boy, whose loyal act was witnessed by a gentleman and communicated to the press, pray let it be recorded in these pages.

From Straffan in Kildare, that gardening home of interest and beauty, lately came some sprays of Pernettyas, superb bunches of bright berries, amongst which the large, pure white variety was eminently conspicuous. Davis' charming hybrids are not sufficiently known, perhaps, to the gardening world at large, but these peat-loving Irish-raised Pernettyas hold a unique position, and will probably retain it to the credit of the raiser for all time. From Straffan, too, came the rain record for the departed year, which, in its total of 43.27 inches holds the record, Mr. Bedford says, for twenty-five years. For nearly that period of time has the writer been privileged to observe and occasionally bear witness to the progressive policy under

the Bedfordian administration. Far from the madding crowd, with its glorious Gunneras and elegant Bamboos by the picturesque Liffey, with its breadths of Daffodils stretching away beyond the Italian garden, or stealing onwards and downwards towards the river's brim; with its great patch of *Cypripedium spectabile* in never-to-be-forgotten luxuriance; with all these and a thousand things waxing and waning according to season as each year slips away, Straffan is eloquent with ever-increasing beauty peculiarly its own.

Lenten Roses—muddy whites, dull purples, washy greens, with here and there some better bred fellow of the Oriental Hellebore family, whiter, purpler, greener, or taller, perhaps, made a quaint but acceptable picture on a chill February day in the Trinity College Botanic Gardens, Dublin. Coming after the Christmas Roses, and before the Lilies of Lent, these Lenten Roses appear to occupy a niche not easily filled by any other flower. In this, at first sight, appears to lay their especial claim to attention more than for that brightness of bloom or subtlety of scent which arrests the notice of a casual observer. It was only, in fact, after a prolonged Burbidge-Hardy discussion, emanating from the esteemed curator and a friend, that the shivering one warmed to them, begged a couple of blooms, and returned with a bunch of the quaint blossoms. These varieties of *Helleborus orientalis* are hybrids of Mr. Burbidge's raising, some of the more distinguished of them having been named by him in compliment to gardeners of both sexes. A few of these seedlings are prettily spotted, and probably all possess capability for further development, entitling them to rank high among the earliest of early spring flowers.

Growing and grumbling from sundry private growers in the matter of market returns for such superfluous "stuff" as they have to dispose of, or are expected to dispose of, at remunerative rates, has led to the inauguration of "The Growers' Association," with a central depôt in Dublin for the sale of garden produce. That there has been in some instances cause for complaint is possible, but supplies of this kind must, obviously, be more or less spasmodic, with the contingent results of a dearth or a glut. The legitimate market grower, whose catering is constant, and who knows how, what, and when to provide for the public, does not, as a rule, complain of Dublin prices, and high grade goods are quickly cleared at prices which compare very favourably with London or elsewhere. There is an art, too, in marketing which amateurs do not quickly grasp, and they are beset by difficulties not easily understood by employers, and for which due allowance should be made.—K., Dublin.

Pear Olivier de Serres.

THIS Pear, which was raised at Rouen and fruited in 1864, was exhibited at the Drill Hall at the last meeting of the Royal Horticultural Society in December by Mr. W. Bain, gardener to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, and received an award of merit from the Fruit and Vegetable Committee. It is thus described by Dr. Hogg in the "Fruit Manual":—

"Fruit, medium sized, 2½ inches wide, and 2½ high; round, flattened, or Bergamot-shaped, sometimes irregular in its outline. Skin, entirely covered with cinnamon coloured russet. Eye, large and closed, set in a pretty deep basin. Stalk, three-quarters of an inch long, very stout, and thickest at the end. Flesh, half-buttery, sweet, with a brisk vinous flavour and a strong musky aroma. A delicious Pear; in use from February to March. It is, perhaps, one of the best very late Pears, of which there are so few. The tree bears well, makes strong standards and handsome pyramids, either on the Pear or Quince. Mr. R. D. Blackmore says of it, 'Very good for so late a kind. The best I have yet found when Josephine de Malines is over.'"

The Manuring of Fruit Trees.

I.—Nitrogen.

THE problem of manuring, so as to get the maximum of produce at the minimum of cost, instead of becoming simpler with the increase of scientific knowledge, becomes more and more complicated. Our forefathers applied dung for everything, on all soils, and it must be admitted that some good crops were the result; but it was at great cost, and the produce of an acre of fruit was certainly, taking one year with another, nothing like the produce of an acre under skilled cultivation to-day where the best scientific knowledge has been brought to bear. Sir John Lawes was laughed at sixty years ago when he prophesied a man would be able to carry enough manure on his back to manure an acre of corn land; but he fulfilled his own prophecy, and we are reaping the fruits of his work to-day—and

County Councils in particular, starting where he left off—and obtaining some very valuable results, not less in fruit growing than in farming.

In dealing with this large subject of the manuring of fruit trees I must assume that my readers know something of the nature and origin of soil, as well as its constituents; but I shall endeavour to so explain myself that even those most ignorant of the subject hitherto may be able to follow me in all my points—which I must ask the more intelligent and better informed to accept as an apology for some elementary explanations.

There are certain elements of plant food which trees must have, and without which they will do no good, or even live if the soil is absolutely destitute of them—happily a very rare condition. There are other elements which the trees absorb if within reach, but which do not appear to be essential. I shall only deal with the former class, which comprises nitrogen, phosphorus, potash, lime, magnesia, iron, and sulphur. As the last two are usually present in sufficient quantity we may leave them out of consideration, and as it is so seldom necessary to supply magnesia we will leave that out of consideration also, and restrict our attention to nitrogen, phosphorus, potash, and lime. This article will be confined to the nitrogenous manuring of fruit trees.

The most general form of applying nitrogen is in that of dung. Some may be surprised to hear that ordinary farmyard manure, well rotted, does not contain more than 1 per cent. of plant food, there being about 10 lbs. of nitrogen, the same amount of potash, and only about 5 lbs. of phosphates in a ton. Stable manure is a little richer than ordinary farmyard manure (unless the latter is from a covered yard), poultry manure about twice as rich, and pigeon manure fully eight times as rich, a ton of this containing about 70 lbs. of nitrogen. The problem of the most economical keeping and using of these manures is a complicated one, and will not be entered

upon here, except so far as to say that in using them for manurial purposes alone, as distinct from mulching to retain moisture, they should always be covered in, to lessen loss of ammonia to the air, even if it is by simply covering them over with a sprinkling of earth. Some guanos are very rich in ammonia, and it is of the utmost importance, if economy is an object, that they should be dug in, however lightly. Other organic manures are rape dust, containing about 5 per cent. of nitrogen, meat refuse, horns and hoofs, shoddy and greaves, and other like substances.

The digging in of green garden refuse is also a useful form of nitrogenous manuring. It is a pity to put this in the ashpit if it can be helped, and also a pity to burn it, as in that case the nitrogen is lost. If the refuse consists of weeds the earth clinging to the roots is rich in nitrogen. Vetches may very profitably be grown in the late summer when the ground would otherwise be bare, and dug in in November. They enrich the supply of nitrogen in the soil, being able, in common with other leguminous plants, to get nitrogen direct from the air through the instrumentality of the nitrogen-producing germs which live in colonies in the little nodules on the roots.

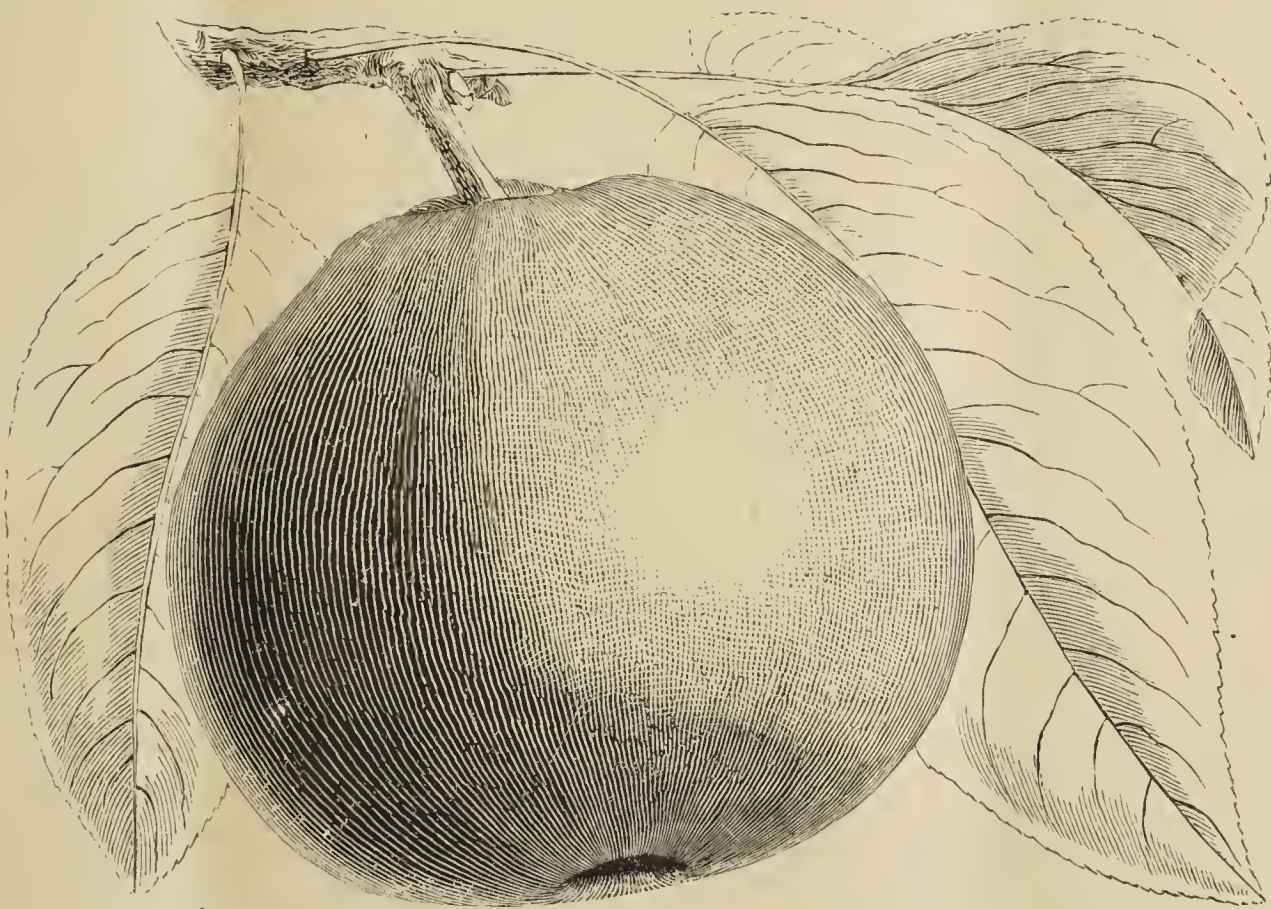
Coming to artificial nitrogenous manures, the most generally known and used are nitrate of soda, containing about 15 per cent. of nitrogen, and sulphate of ammonia, containing about 20 per cent. of nitrogen. The effect of these two manures is practically the same, though different in their method of action. The nitrate of soda is very soluble, and being very easily washed out of the soil should, for economical use, be applied in small quantities several times during the season. It is ready formed plant food, whilst the ammonia of

sulphate of ammonia has to be gradually converted into nitrate by the nitrifying germs in the soil, which can only be done in the presence of chalk. Hence, on soils lacking in lime, sulphate of ammonia is not so effective as nitrate of soda. Not being so liable to be washed out as nitrate of soda it can be applied in one dressing in the spring. Given suitable soil the sulphate is more economical than the nitrate, when the price of the former does not exceed the price of the latter.

Having very briefly described the forms in which nitrogen is used and their action on the soil, we come to consider their application and effect as regards fruit trees. At the outset, let it be stated positively that newly planted trees should never be treated with nitrogenous manures, either as dung put in the hole when planted, or as liquid manure. The effect of nitrogen is to promote growth of leaf and stem, making the leaves dark and vigorous. Trees are sometimes ruined in their earlier stages, as fruit-bearing trees by the application of too much nitrogen, as, when not accompanied by a plentiful supply of phosphates, it induces long-jointed, sappy wood, which does not ripen well, and rarely produces fruit. When the tree is planted, the hole is generally filled with good dark soil. If it is taken up in a few years the soil will have become light in colour. Why is this? And what caused the darkness of the soil in the first place?

The humus, or organic matter in the soil, which contains the

nitrogen, caused the dark colour. The tree has fed on this and used it up. There is no doubt that trees pretty generally receive too much nitrogen in their earlier stages, and too little in after years when they are getting exhausted by bearing. It is not for the good of the tree, from a bearing point of view, that it should make much wood until its roots have got well established over a good sized feeding area. It is better to wait another year or so for the wall to be covered or the space to be nicely filled. It by no means follows that because the soil round the tree referred to above was light, the tree



PEAR OLIVIER DE SERRES.

needed nitrogen. It may have put out its roots so that it was getting plenty 2 or 3 yards away.

The needs of a tree must be carefully considered as a case by itself. The most usual index to its requirements in the way of nitrogen is in the amount and quality of the young wood it is making. If it is very vigorous, especially if it is long-jointed and sappy, the tree does not need any nitrogen. If, on the other hand, the tree is growing in a weakly manner, nitrogen will be of great benefit. If, too, the tree is bearing heavily, nitrogen will assist the swelling of the fruit, and there will be no fear of inducing too rank a growth with such a drain on its resources. As a general rule, it may be stated that if the tree is making less than a foot to a foot and a half of growth in a season, according to the character of the tree, it needs nitrogen, and if making more than that amount it does not need it. Another general rule, not necessarily conflicting with the above, is that very old trees will generally benefit by the application of nitrogenous manures, preferably animal manures. Rank growth is not usually compatible with fruitfulness, and must not be encouraged. An exception to this and to some other statements above must be made in favour of some fruits which bear principally on the young wood, such as Raspberries, Black Currants, and Gooseberries, all of which respond to liberal nitrogenous manuring, especially a mulching of animal manure, by abundant crops, the difference in both the size and quantity of Black Currants being especially noticeable. This, of course, is not to the exclusion of phosphates. Some growers favour the application of nitrate of soda just before the trees come into blossom to facilitate the setting of the fruit.—A. PETTS.



Manipulating Chrysanthemum Florets.

VISITORS to the late Chrysanthemum shows were heard to remark upon the great difference in colour and form of floret of the same variety in several stands of cut blooms. For instance, on some stands *Pride of Madford* was represented as being an incurved bloom belonging to the Japanese section, and showing a dull red or claret colour with a silver shading. Other blooms exhibited the rich plum colour so pleasing to all. It was the two opposite types of bloom that bewildered the innocent onlooker. To those conversant with Chrysanthemums in their various phases of development the difference was recognised as the result of manipulating the florets in such a manner that they were reversed. What was naturally an incurving floret became a reflexed one, and thus exhibited the charming lustrous colour. Such a system was strongly condemned by not a few good judges of the flower. In several instances blooms lost points in judging on the strength of their being unnatural. Mrs. Barkley was another instance of such manipulation of the florets.

Whether this is a practice that should continue is entirely a matter for the executive committees of the various shows in directing the judges whom they employ. Whether the latter are firm enough in carrying out their duties to put a stop to what some persons term a most reprehensible practice is not for me here to say. The point in dealing with such a practice would first be to define whether certain varieties belong to the incurving Japanese class or to the reflexed. Who will venture to set the Chrysanthemum world right in this? I would ask. No body of experts that I know can agree as to this. Some varieties unquestionably belong to the incurved section while developing their florets; afterwards they are neither one thing nor the other. In which section should these be staged? is the first query I would put.—SADOC.

Specimen Chrysanthemums.

ALTHOUGH practised cultivators of specimen Chrysanthemums have a selection of varieties that answer their purpose very well, they do not object to know of other varieties that are amenable to this form of culture. As a close observer of other people's practice I sometimes unexpectedly meet with varieties that cannot as yet be regarded as being commonly known as suitable for growing as specimens. With a view to assisting others I have jotted down the names of really deserving varieties seen in excellent condition during the past autumn.

It is generally admitted that incurved varieties are more difficult to cultivate than the Japanese, therefore a gain of even a single variety is appreciated. *Madame Ferlat* was grandly staged at Birmingham. One plant carried thirty-five handsome blooms, many of them measuring 5 inches in diameter, solid and furnished with grand florets; the foliage, too, was simply magnificent. *Lady Isabel* was also staged in good condition, the blooms being free from that coarseness which is present too often in specimens where the number has been severely restricted. With more blooms the colour is intensified, which is a distinct improvement in this variety. *Ma Perfection* was many times seen in very fine condition. No variety of which I know appears to perfect its blooms better in quantity than this.

In the Japanese section we have a greater number to choose from. *Madame G. Bruant* was productive of the finest specimen that came under my notice last season; one plant not too widely spread out, as is frequently the case, was perfectly clothed with deep green leaves and carried forty blooms perfect in form and of full size. The semi-drooping florets render it especially suitable for specimen culture. *Modesto*, with its closely incurving florets of the richest orange yellow, forms a capital contrast to other colours. Plants of this variety furnished with three dozen blooms must be admired. *Pride of Madford*, as might be expected, was staged in capital condition; the rich plum colour is more conspicuous in smaller blooms than in those grown to exhibition standard. *Lady Hanham*, like the remainder of the *Vivian Morel* family, is well adapted to this form of culture. *Madame Gustave Henry*, as a white, is well deserving of cultivation. When an extra strain in developing the blooms by increased numbers is put upon the plants fewer of the rougher basal florets are to be found. *Miss Watson*, bright yellow; *Mrs. Coombes*, mauve lilac,

with its narrow semi-drooping florets and full solid blooms, are all that could be desired. *Madame Carnot* has been staged so often that it can hardly be classed as a novelty; still its merits for this method of culture are of such a high order that prominence should be given to it wherever possible.—E. M.

Our Ancient Art.

SINCE the remote days when the delights of gardening were enjoyed by the solitary man Adam, how great has been the sum total of human happiness obtained from the pursuit of the grand old art! The natural life of the country, which at one time was the lot of all, has gradually been relinquished by the large section of the community in favour of an artificial existence amid the glare and glamour, or the smoky slums of great cities. Throughout the latter half of the nineteenth century the population of Britain has been drawn in a gradual and ever-increasing stream from the country to the towns, with the inevitable result that in the course of a generation or two the physical stamina of the nation must become less satisfactory, unless some interchange of population between country and town takes place. One has only to watch the physical condition of the average boy or girl in our large manufacturing towns to note the significance of the above remarks.

Among the problems to be solved during the present century surely that of increasing the rural population of Britain demands serious attention. In dealing with problems of this description the conflicting instincts of human nature, as well as the interests involved, render remedial measures extremely difficult. The natural love of country life seems on the one hand to be inherent in almost every human breast; on the other hand there is also present a desire for change, a love of excitement, and an eagerness to join in the "race for wealth" which are associated with city life. So keen has the competition become that it is rare indeed that any but the sturdy and strong succeed, while thousands find an early grave through disappointment and debilitating surroundings.

By what means such matters will be put right it needs a bold man to predict, but who will say that it may not be brought about by natural rather than economic laws? Hope for the future lies to a great extent in the fact that while competition in the towns has become keener, there is in many respects an absence of competition in rural districts, and some clear heads can already foresee that country pursuits will in the future offer good opportunities to shrewd and industrious men.

The gardening instinct is as strong, if not stronger, to-day than at any period during the history of the world, but it assumes different forms according to circumstances. The suburban dweller, who has only a little garden to cultivate, boasts of a greenhouse which proves a continuous source of delight. In the smoky slums of large towns a few pot plants struggling for existence are tended with loving care, and help to keep alive the taste for gardening among thousands who know naught of country life; and who will say that, in spite of many drawbacks, the interest displayed in allotment culture does not show how strong is the gardening instinct still?

The demand for gardening periodicals, for pamphlets, and standard works is also greater than at any other period, and many who have but a few square yards of garden to tend must have their gardening paper. All these things, however, only show that the desire to "garden" is still a healthy and vigorous force, notwithstanding which the broad fact remains that when it ceases to be remunerative in comparison with other callings it is looked upon rather in the light of a pleasant pastime than as a means of livelihood. Will it always be thus, or will the time come when the acquirement of wealth will play a secondary part in the nation's, or individual's, estimate of happiness? Should such a time come, those indeed will be the palmy days in some respects for the progress of the "grand old art."

Look at the matter again from another point of view. Should the time come when it is absolutely necessary for English people to produce at home a larger proportion of their food supplies, then indeed will the gardener, the farmer, and the workman be able to command a full share of prosperity. At present the value of their labour is underestimated, principally because the cost of transporting food across the seas is ridiculously low when compared with inland rates of carriage. Whenever such matters are satisfactorily settled commercial gardening and farming will again flourish, and private gardening—which is to a great extent dependent upon such wealth-producing enterprises—will be restored to its ancient splendour. Our motto at present must, however, be to blend science, practice, and energy in the conduct of our work, and thus strive to obtain the best possible results from the land now cultivated. The grand old art is not played out, 'tis only undergoing a change.—H. D.

NOTES & NOTICES

Recent Weather in London.—After a week of winter Londoners rejoiced in a week-end of spring. The temperature went up a full 10°. It reached 63° in the sun on Saturday, and 60° on Sunday. The sun shone brilliantly at intervals on Monday, and the rain, which threatened now and again, did not fall. Tuesday was cold, and Wednesday opened very wet.

Weather in the North.—From the 19th to the 22nd inst. there was a return of frost, 9° being registered on the mornings of the 21st and 22nd, accompanied by very dense hoar frost. A change occurred during the following night, and fresh weather has continued since. Saturday was an exceedingly pleasant day for the season; Sunday and Monday were dull, cold, and drizzly.—B. D., *S. Perthshire*.

A Fountain for the Archbishop's Park.—On the recommendation of the Parks Committee of the London County Council it was agreed: "That the granite drinking fountain offered through the Metropolitan Drinking Fountain and Cattle Trough Association for placing in the Archbishop's park be accepted, and that the council do agree to maintain the same and to undertake the supply of water to the fountain, and that the chief officer of the parks department do make all necessary arrangements in the matter."

The Broccoli Crop.—The Broccoli season in West Cornwall has proved the worst for many years, in a pecuniary sense. The yield has been prolific, and as many as eight or ten special trains would leave the West of the Duchy with hundreds of crates. Fairly good prices were realised in London, Birmingham, Glasgow, and other places, but they were not sufficient to be remunerative to the grower. Thus, after he had paid carriage on the crate he would sometimes find that in return for all his trouble he would only receive 1s. or 1s. 6d. In some instances big money was obtained, but these were few and far between. At this rate the trade in Cornish Cauliflowers is bound to be crippled.

Improving Epping Forest.—The annual report of the Epping Forest Committee of the Corporation states that the thinning operations—at one time the most pressing of the necessary works and improvements—had been gradually getting lighter year by year. They had extended several old openings on undulating portions in Loughton parish, with the gratifying result that many charming views had been obtained, formerly obscured by dense masses of stunted trees. The additions and alterations to Queen Elizabeth Lodge had been completed at a cost of £1000. A large number of cricket pitches and football grounds had been opened in the Forest, and battalion drills and other military evolutions had been held.

The Oil Fly.—The Rome correspondent of the "Morning Post" writes: "An interesting discovery has just been made at Lecce, in South-eastern Italy, by peasants, who, while burning a quantity of weeds to warm themselves, noticed that as the weeds burned a number of insects escaped from them into the air. Examining some of the insects they were found to be the terrible *Mosca olearia*, or oil fly, which has devastated the Olive yards of South-eastern Italy for the last two years. Further examination showed that the insects came out of the capsules of a species of wild Onion which is very common in those provinces. A number of wild Onion stalks were gathered and carefully examined. All of them were found to contain oil flies, some having as many as forty or fifty. The discovery is of the greatest importance, as it will facilitate the war against the oil fly, hitherto carried on without much success. Active researches are now being made to settle the points whether the oil fly inhabits the wild Onion every year, whether the wild Onion is the only plant used by the fly as a shelter, and whether it is used merely as winter quarters. The oil fly plague, which has already cost the South-eastern provinces of Italy several million pounds, is one more illustration of the criminal folly of the Italians in allowing the wholesale destruction of every kind of bird. Foreign men of science and naturalists have repeatedly protested against the system of putting up nets along the seashore to catch migratory birds, and of permitting peasants and so-called "huntmen" to shoot indiscriminately every sort of feathered creature from the size of a wren upward. Under such conditions insects of every sort flourish, with the result that insect plagues occur and cause misery and loss throughout vast tracts of territory."

Death of Mrs. Robert Fenn.—It is with the most profound regret that we learn of the death, on Saturday last, at the age of sixty-five years, of Eliza, wife of Robert Fenn, Cottage Farm, Snlhamstead, near Reading. All readers of the *Journal of Horticulture* will unite with us in tendering the deepest sympathy to Mr. and Miss Fenn in their terrible bereavement.

Government Seed Tests.—The departmental committee appointed by the Board of Agriculture, and presided over by the Earl of Onslow, to inquire into the conditions under which agricultural seeds are at present sold, has now completed its report. The committee come to the conclusion that, generally speaking, the seed trade in England is, on the whole, well conducted, and has of late years improved with the advance of science; nevertheless, the majority of the committee recommend that one central station should be provided in the United Kingdom for the purpose of testing the purity and germinating power of seeds sent to it for official examination.

Wargrave Gardeners' Association.—At the meeting of this association last week Mr. W. J. Fuller read a paper on "Potatoes." The subject was selected for the assistant and single-handed gardeners' essays last year, for which Mr. Fuller won the first prize. He dealt with the chemical composition and varieties of Potatoes, the soil most suitable for growing them, their cultivation, manures and the best time of applying them, the preparation of the sets, time and manner of planting, earthing up, lifting, storing, and exhibiting. The Potato disease and remedies, with the manner of their application, were referred to, and the different means of forcing Potatoes mentioned. A discussion took place.

The Brighton and Sussex Horticultural Society met on Thursday evening. The prize competitions—the first of the year—attracted several entries, and many beautiful specimens of Cyclamens and Primulas were exhibited. The following found favour with the judges:—Two Cyclamens.—1, Mr. C. Murrell; 2, Mr. T. Fairs; 3, Mr. W. Manton. Two Primulas.—1, Mr. T. Fairs; 2, Mr. J. Bunney; 3, Mr. G. Hart. Two Primulas (open to amateurs).—1, Mr. A. T. Braden; 2, Mr. G. F. Bunney; 3, Mr. G. Short. Mr. T. W. Sanders delivered the lecture, his subject being, "Mistakes in Hardy Fruit Culture." Questions were addressed to the lecturer, and ably answered, Messrs. Rapley, Spottiswood, and Colman taking part in the discussion. During the evening Mr. Miles broached the subject of the advisability of holding a dinner. On the initiative of Mr. Richardson, supported by Mr. Anderson, it was unanimously resolved to do so.

Croydon and District Horticultural Mutual Improvement Society.—There was a crowded meeting in the Society's room on February 19th last to hear Mr. Cole, who gave a very interesting paper on the "Cultivation of the Gloxinia." The popularity of the Gloxinia and its beautiful decorative effects were specially noted, and a list of the most charming varieties were given, the following being a few of the best—viz., Mrs. W. Weaver, Charles Young, Lady Warwick, Duchess of York, Queen of My Heart, Lady Roberts, Princess of Wales, Ellen, Mrs. Fisher, Burgundy, Mrs. John Peed, and Her Majesty. Few flowers possess such lovely colouring and form as the Gloxinia. The interest in the subject was evidenced by the remarks and discussions which followed. The secretary, Mr. Gregory, announced the special arrangements for the dinner and social at the Greyhound Hotel on Wednesday evening next. With a vote of thanks to the chairman a very profitable evening was brought to a close. Ten new members were elected.

Broughty Ferry Horticultural Association.—The monthly meeting of this association was held last week in the British Workman, Mr. James Slater, vice-president, in the chair. Mr. James Reid, gardener, Dudhope House, Dundee, read a paper on "Stove and Greenhouse Plants." In an interesting and comprehensive manner the wide range of materials which form successful cultivation was dealt with by Mr. Reid, who, well known as an authority in the gardening world, was listened to with close attention by a large audience. He devoted a large part of his paper to the size of pots to be used, drainage (all fast-growing plants, in the interests of growth and flowering, requiring good drainage), watering (the most important point in a plant's activity), the nature of soils (fibrous and non-fibrous), the food of plants, and the benefits derivable therefrom through chemical application to plant life. On two tables very effective collections of Hyacinths, Tulips, Chrysanthemums, Narcissus, Cineraria, Camellia, and Primulas were shown by the essayist, Mr. David Meeston, The Lodge, and Mr. L. S. Reid gardener, Douglas Terrace.

Shirley and Surrounding Districts Gardeners' and Amateurs' Mutual Improvement Association.—The monthly meeting of this association was held at the Parish Room last week. An interesting lecture was delivered Mr. A. Dean, F.R.H.S., on "The Cultivation of Potatoes." The Potato had, he said, deteriorated owing to its transposition from warm climates. He gave very useful hints of the different varieties for different soils, stating that a grower in one season raised 647 lbs from a pound of Eureka, and 372½ lbs. from a pound of Snowflake. He did not believe that Potatoes would deteriorate if well treated. Selected tubers for planting should not be too small, but even, and of a nice appearance. It pays well to store seed Potatoes in boxes from which they can be planted direct. It is also a good plan to disbud in order to obtain one good shoot. Top-dressing should not be too rich, and spraying with Bordeaux mixture was recommended for destroying the fungus germs which caused the disease. The next meeting, March 18th, is the annual one, when the members give their friends a musical entertainment.—J. M.

Birmingham Gardeners' Association.—Under the presidency of Mr. W. B. Latham, curator of the Botanical Gardens, Birmingham, Mr. H. A. Burberry (late Orchid grower to the Right Hon. Joseph Chamberlain) read a thoroughly practical paper on the cultivation of Dendrobiums, taking *D. nobile* as the basis subject of the genus. This he considered yet to be one of the best and most easily cultivated. The pruning away of the old and effete pseudo-bulbs was recommended by the essayist, but the pseudo-bulbs which had just done flowering might be retained for another year. As regards growing plants for the next year's flowering from aerial-rooted growths, it necessitated special treatment, not at command with every grower. Manure in any form was not advocated, excepting perhaps a handful of soot occasionally in the water. An interesting and instructive discussion ensued, during which the lecturer's acknowledged ability as a cultivator was evidenced. One of the members (Mr. W. Gardiner) exhibited a reproduction of a photograph of a magnificent plant of *Dendrobium thyrsiflorum* which carried seventy racemes of bloom, and each raceme averaged about fifty-five blooms. The plant in question was reproduced in the *Journal of Horticulture*, September 5th, 1895.

Chester Paxton Society.—At a meeting held in the Grosvenor Museum on Saturday, under the presidency of Mr. John Taylor, the honorary secretary, Mr. G. P. Miln, read a paper entitled "The Commercial Aspect of Apple and Pear Culture." In his opening remarks he commented upon the scarcity of home-grown fruit at this season of the year, and made mention of the fact that, although he endeavoured to buy home-grown Apples in Liverpool a few days previous, the larger dealers informed him that only American fruit was now obtainable. A collection of Cheshire-grown fruit shown at this meeting, however, went to prove that both Apples and Pears of home growth are still to be had, and of excellent quality. Continuing, he remarked that the imports of foreign Apples alone into Great Britain last year amounted to 2,128,477 cwts., the value of which he estimated at about 1½ million of money. A great part of these, he contended, ought and could have been produced at home. He gave as an example a Cheshire orchard, 1½ acre in extent, which was planted some eight years ago, and which last year produced at the rate of 75 cwt. of Apples, 43½ cwt. Pears, 12½ cwt. of Plums per acre, which realised a gross value of £70 per acre. These figures were decidedly encouraging, and went to prove that Apple growing could be made a profitable industry provided proper methods were adopted. Apart from planting the best varieties in suitable situations, Mr. Miln emphasised very strongly that care should be taken to gather all fruits carefully, that it should be graded so that the samples should be of a uniform character, and that special care should be exercised in packing where the fruit had to travel a distance. In his concluding remarks he commented upon the superior qualities of the best British grown Apples over that of foreign grown fruit, which was strikingly borne out by the dishes of British and American Apples staged on the table. Amongst the more prominent of these were Golden Spire, Warner's King, King of Tompkin's County, Yorkshire Greening, Bismarck, Farmer's Glory, Mère de Ménage, Annie Elizabeth, and several others. Railway rates affecting the carriage of fruit and other matters were dealt with by subsequent speakers, and the meeting closed with a hearty vote of thanks to Mr. Miln for his paper, which, it was explained, had been prepared at very short notice. [Kindly address all letters to the Editor, 12, Mitre Court Chambers, Fleet Street, London, in future.]

Ipswich Gardeners' Association.—Mr. W. E. Watkins, president of the Ipswich Scientific Society, lectured at the Art Gallery, High Street, last Thursday evening, on "Plant Food, Flowering Plants, Bacteria and Fungi, Diseases Caused by Vegetable Organisms." There was a very large gathering of members of the association and their friends. Mr. Alan Turner presided. A variety of parasitic plants were put on the screen, showing how insidiously they worked and sapped the lives of the plants to which they attached themselves. Among these were the familiar Witch's Broom on Cherry trees, Shepherd's Purse—a very prolific weed—and others that damaged or destroyed farm produce of all kinds. The Vine fungus and the means of combatting it were also dealt with by Mr. Watkins, and the lecture was concluded with some curious slides, depicting the action of certain fungi that remove small dead bodies—flies, &c.—which would otherwise vitiate the atmosphere.

Beckenham Horticultural Society.—On Friday last Mr. E. Beckett, F.R.H.S., of Aldenham House Gardens, delivered a lecture to this society on "Vegetables for Exhibition." Mr. Beckett received an enthusiastic welcome. His lecture was distinguished by the vast amount of practical information contained therein. First came the preparation of the soil, trenching the same 2 feet 6 inches or 3 feet deep, adding two layers of manure in the operation, and if, as in Mr. Beckett's case, the soil is of a clayey nature, old lime rubble, road scrapings, burnt refuse and leaf soil added freely, and the position of the soil reversed at each trenching, so that 3 feet of cultivable soil be obtained; this is insisted on by Mr. Beckett as essential to success. All the most popular vegetables—i.e., Potatoes, Peas, Parsnips, Onions. Carrots, Turnips, Cauliflowers, Leeks, Tomatoes, Celery, Beet—were treated separately, and the varieties most suitable for the various seasons named. A hearty vote of thanks was accorded Mr. Beckett for his excellent lecture.—T. C.

New Park and Museum for London.—At a recent meeting of the London County Council the chairman said he had received a letter from Mr. Horniman, a member of the council, offering on behalf of his father the Horniman Park and Museum at Forest Hill as a free gift to the people of London. That estate was worth at least £50,000, and probably £100,000, and the only precedent for such a munificent gift was that of Waterlow Park. The property is situated close to Lordship Lane station, on the South-Eastern and Chatham Railway, and about three-quarters of a mile from Forest Hill station on the London, Brighton, and South Coast Railway. It consists of (1) a large house known as Surrey Mount, and some 9½ acres of pleasure grounds on the summit and slope of a hill commanding extensive views over south-eastern and south-western London. The site is a suitable one for a park or recreation ground, and has been open to the public during the summer months for four years. Mr. Torrance, the vice-chairman, moved that the offer of Mr. F. J. Horniman, M.P., be accepted, and that the thanks of the council be communicated to him for his munificent gift to the inhabitants of London. Mr. Fletcher, the deputy-chairman, seconded the motion and hoped that this generous example would be emulated by others. The resolution was carried.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1901.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
February.		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
Sunday ..17	N.W.	deg.	deg.	deg.	deg.	ns.	deg.	deg.	deg.	deg.
Monday..18	N.N.E.	36.8	34.5	41.1	33.9	0.02	35.3	39.2	43.3	29.7
Tuesday 19	W.N.W.	35.7	33.5	36.4	31.3	—	35.5	39.2	43.2	24.1
Wed'sday 20	E.N.E.	33.0	32.0	35.0	29.5	0.05	35.7	39.2	43.0	21.4
Thursday 21	N.N.E.	33.5	30.7	35.0	32.4	—	35.9	39.2	43.0	29.2
Friday .. 22	E.N.E.	30.5	29.2	39.4	24.1	0.07	35.7	39.2	42.9	16.2
Saturday 23	W.	39.3	38.2	45.1	30.5	—	36.0	39.0	42.8	30.5
		40.4	37.9	46.1	37.4	—	37.9	39.4	42.8	3.07
MEANS ..		35.6	33.7	39.7	31.3	Total 0.14	36.0	39.2	43.0	2.60

The weather during the week has been generally dull. A fall of snow occurred on the 21st inst., and occasional bursts of bright sunshine on the succeeding days.



The Dahlia.

MR. BROTHERSTON, in his very interesting article on the Dahlia, mentions Holland House and the first successful importation of the flower into England. Holland House suggests the Lady Holland of 1804, a great lady of the period, and a very greatly admired one. Her mention suggests that graceful tribute of admiration from her husband alike to the lady and the beautiful new flower.

The Dahlia you brought to our isle,
Your praises for ever shall speak;
Mid gardens as sweet as your smile,
And in colours as bright as your cheek.

—C.

Seedling Apples.

WHEN looking through orchards and fruit plantations it is impossible not to notice that a number of the trees one meets with are evidently seedlings or grown from grafts of chance seedlings. Quite a number have been noticed lately, and last autumn I had an Apple brought me that is not a Blenheim or a Ribston, but had the characteristics of each so strongly marked that I could only come to the conclusion that it was a hybrid between these two excellent kinds. There are many of these that would defy anyone to name, and I can only account for them in this way.—H. R. R.

Successful Trapping of Wireworms.

A correspondent writes to us as follows:—Finding that some of my Tomato plants in two hothouses were being destroyed by wireworms a few days after they were set out, I cut some Carrots and garden Beets into wedge-shaped pieces, and stuck one into the soil 2 or 3 inches off each plant. After three days I had these traps taken up with a trowel, and from 1157 traps on the soil close to these we gathered a few over 700 wireworms. The traps were set again, and, no doubt, we shall catch many more of these pests. The Beet seems to do as well as the Carrot, and presumably the common Mangold would serve equally well. In some of the pieces there were several wireworms, fourteen having been obtained in one case. In future I shall stick a piece of Carrot or Beet near to every plant at the time of planting. It is desirable to place the pieces 3 inches from the plant, so as not to disturb the roots when taking it up to examine it.

Late English Apples.

A CAUTIOUS man is "W. S., Wilts," who knows how to wield the pen in such a way as to show how others "must agree" with various remarks advanced, and then add a word of warning—or delicate criticism—himself. On page 130 "W. S." has surpassed himself in handling the delicate question of our fruit supply without wounding the susceptibility of anyone. "Many will and must agree that a better supply of good late English Apples is needed." The "canny" "W. S." does not, however, venture to admit that he thinks so himself. But he evidently does think that if late varieties are planted largely they will in time become unprofitable. Thus the matter resolves itself into the usual question of supply and demand. How well we all know that although much has been done to advance fruit culture during recent years, there is still a scarcity of good home-grown Apples from Christmas onwards. The average samples seen in our markets cut but a sorry figure in point of appearance when compared with foreign supplies, and yet the grand exhibits continually staged by some of our English trade firms show beyond a shadow of a doubt that this country can still produce the finest Apples in the world, not only in point of flavour, but also in appearance.

This, then, clearly shows that we have still a weak point in our armour. We must grow samples of better quality generally, which can only be brought about by planting approved varieties, and paying more attention to pruning and feeding. The time may come when our markets are so well supplied with well-grown English Apples that further planting for a time may not be justified. That time has certainly not yet arrived, nor will be reached until we have considerably reduced the huge importations which each year come to us from across the seas.

Land in Britain is certainly cheap enough to-day to enable us to successfully compete with Apple growers whose produce travels thousands of miles to find a market. The difficulty about railway

rates is one which undoubtedly will be successfully grappled with in the future, and the men who plant suitable varieties now, and cultivate well, will reap a fuller reward than procrastinators who "wait" to have matters set right before they bestir themselves. There is also room for improvement in regard to late varieties of dessert Apples. We want one which combines the good keeping qualities of Sturmer Pippin with the flavour of Cox's Orange Pippin and the appearance of Gascoyne's Scarlet Seedling. Fortunate will be the man who raises such a variety. If it comes soon "W. S., Wilts," will, I think, be one of the first to plant it.—H. D.

Immature Tomatoes.

I NOTICED in a contemporary that two correspondents had recently submitted examples of immatures Tomatoes for examination as to the pale green-coloured patches present in the skin of the fruit, it being the editor's opinion that the hard patches present on the otherwise ripe fruit were due to excess granulations of one of the constituents, the result being caused by lack of potash in the soil; that sulphate of potash removes the complaint, and that kainit should not be used. I have examined a few of the affected fruits grown by the person who submitted those in question, and he had attributed the cause to an overdose of a compound manure concocted by himself, and in which kainit formed one of the ingredients. Another local grower whose Tomatoes were similarly affected was inclined to the opinion that the defect was owing to a low and damp temperature and atmosphere; but evidently that was not the cause, inasmuch as the affection in question is not of a fungoid nature, whilst the former grower's treatment coincides with the analytical dictum. In addition to the cases mentioned I have recently particularly noticed baskets of market Tomatoes similarly affected. The rind of the unripened patches assumes a shrivelled appearance, and the flesh of those portions remains hard, hence together naturally affecting the sale of the fruit, and also renders it unfit for exhibition purposes. Perhaps other of your correspondents may give their experience and opinion of the matter in question.—W. G.

Pharmaceutical Society v. White.

The First Blow at a Monopoly.

This was an appeal by the council from a decision of a Divisional Court affirming a judgment of the County Court judge of Worcester-shire. The Society sought to recover a penalty against Mr. White for selling to the informant a two gallon drum of a weed-killer manufactured by the Boundary Chemical Company (Ltd.). Liverpool. The defendant was a florist carrying on business at Worcester, and was in the habit of taking orders for this weed-killer. He told customers they could write direct to the Boundary Company, enclosing the money, or he would take the money and forward on to the company the purchaser's order. It appeared that he had never kept for sale any of the weed-killer on his premises, and that he had an agreement with the chemical company whereby he received 25 per cent. of the price of the weed-killer sold through him as commission. The County Court judge held that under this agreement the respondent was a mere agent. From this decision the Society appealed. Mr. Danckwerts, K.C., and Mr. Grey appeared for the Society, and Mr. Cavanagh for the respondent. The Master of the Rolls said the Act imposed a penalty on anyone selling an article containing poison who was not a duly registered pharmaceutical chemist or chemist or druggist. In this case there was no question either that the weed-killer was not a deadly poison—for it contained arsenic to a large extent—or that the respondent was not a qualified person under the Act for the sale of such a poison. The County Court judge had found as a fact that White was not the seller, but only a mere agent for the vendors. Having referred to the evidence of what took place at the sale in question, his Lordship said it was clear that the respondent told the informant that he had none of the weed-killer on the premises, and that he would take an order on behalf of the company, or the would-be purchaser could send the order himself direct to Liverpool. The informant said he would rather give the respondent the order and pay for it then. Thereupon White made out a receipt on paper supplied by the company, and signed by himself as their agent. On such evidence it could not be said that there was no evidence to support the judgment appealed from. The appeal accordingly would be dismissed with costs. The Lords Justices concurred. Mr. Cavanagh said the appellants had been ordered to give an indemnity for all costs incurred by the respondent as a condition for leave to appeal, and he asked that the appeal should be dismissed on those terms. The application was granted.

Ixora Regina.—We omitted to say that the block of *Ixora Regina* on page 159 was reproduced by the kindness of Mr. Wm. Bull.

Palms for Room Decoration.

PALMS are indispensable for room decoration; whether they are used in solitary positions or rising out of groups, they impart attractions that no other plants can do. There are numbers of varieties from which a suitable selection may be made that will bear the confinement of rooms for a long time without being seriously injured. It is necessary, however, to keep these plants free from dust, water them with care, and remove them from dark to light positions frequently. Some judgment is needed in selecting positions for the different kinds. Those of a hardy nature that can be kept in a cool house should be assigned to draughty corners. Although some Palms bear greenhouse treatment with impunity and will live in the open air during the summer months, it must not be forgotten that this treatment does not improve their appearance or promote their progress. The beginner would do well not to divide those selected for this purpose into two sections and grow some in a warm house and the others in a cool one. The cool house kinds will be found to increase in size and make double the progress if grown in heat until they have attained a size sufficiently large for the purpose for which they may be required. They may then occupy a position during the winter months where the night temperature is never allowed to fall below 45°.

Chamærops Fortunei is not considered, for it will thrive in almost any position, and will in some localities endure the severity of our winters out of doors. For general use, however, it is too stiff and heavy. We keep an average night temperature of 55° for our Palms during the winter months, both for growing and restoring those that have been used in rooms. The summer temperature ranges from 65° to 70° at night, and 10° or 15° higher from sun heat. We syringe freely and maintain a moist temperature, giving air daily from May to October to maintain a sturdy growth. Plants from this structure are hardened for a few days before they are taken into rooms. If the whole are needed for any special occasion the temperature of the house is lowered 5° at night and more air is given during the day. By this treatment we find little or no harm results by using plants for a night or two. Shade is necessary in growing Palms, and a high dry temperature must be avoided, for it is favourable to the production of thrips and the rapid increase of scale. Soot water in a perfectly clear state is invaluable both for watering and syringing over the foliage, as it imparts to the foliage a dark green, healthy appearance.

Cocos Weddelliana, being a general favourite, is given the first place. It will not, however, bear the hardships that many other varieties will. Fortunately it is a cheap Palm, and can be grown quickly into a suitable size for table and other forms of decoration. It will be found to do better in a temperature of 60° during the winter, and should be potted in three parts peat to one of loam, with a liberal quantity of sand. It is a fine rooting Palm, and will not flourish satisfactorily if the soil used consists mainly of loam, which forms the staple soil for all other kinds. Even for *Kentias* we have discontinued the use of peat. We use good fibrous loam and coarse sand, with charcoal added and bonemeal. Artificial manures are applied about three or four times a year to those that have filled their pots with roots.

Kentias are the best of all Palms for decoration; there are no others that can equal them, either for bearing the hardships of room decoration or for their graceful appearance. *K. Belmoreana* is the most handsome of these, but is of slower growth than *K. Canterburyana* and *K. Fosteriana*. The whole of the *Kentias*, however, are well worth growing, and if limited to one class of these plants we should certainly grow *Kentias*, to the exclusion of all others. *K. sapida* is the hardest of all. Being of dwarf slow growth it is very shapely, and suitable in a small state. *K. Belmoreana* is also perfect in shape in a small state, while *K. Fosteriana* is rather too thin.

Phoenix reclinata and *P. tenuis* are useful Palms for room decoration, but they are stiffer and not so graceful as *P. rupicola*. We are increasing the stock of this, and shall gradually exclude the other two. This ranks next for gracefulness and beauty to *K. Belmoreana*. During the past two years we have had frequently in the centre of a room a large plant of this variety, and little or no harm has been done to it. It is wise, however, to take them out occasionally for a few months to the more genial conditions of the structure in which Palms are grown.

Geonoma gracilis is also a light useful Palm, and in potting and general treatment, in a young state, it should be grown with *Cocos Weddelliana*. In a young state, even in small pots, it is useful for table decoration. Being perfect in shape, it is one of the best Palms that can be grown in 2 and 3-inch pots where plants of this size are appreciated in glasses for the ornamentation of the dinner table. As the plant advances in growth it still retains its light graceful appearance. Although it does not bear confinement in rooms

long without injury it is nevertheless well worth growing for special occasions. For rising above groups of plants at the base of mirrors, or for elevation near the sides, it and *Cocos Weddelliana* have no equals.

Seaforthia elegans, although it cannot compete in beauty with the *Kentias*, is for the purpose in view a valuable quick-growing Palm, and one we employ largely for general purposes to save those of slower growth and greater value. Well-grown plants are very effective in groups, and even if they become injured they are much more quickly restored than *Kentias*. This is unquestionably a useful conservatory Palm, and in this structure it may be freely employed when it is large enough for use in rooms. It will also grow under the shade of Vines, and will bear this treatment throughout the greater portion of the year, although when the Vines are at rest it is advisable to remove the Palms where the temperature will not fall quite so low. *Seaforthias* grow quickly in heat, and those starting to raise a stock of Palms would do well to employ this until better kinds of slower growth can be developed.

Latania borbonica can be used in small pots, for which it is suitable when grouped with other plants. If these are grown in heat they are more effective than if grown cool, and assume a low flat appearance. When fully developed it is perhaps the most unsuitable Palm that can be grown for decorative purposes. It is too stiff and flat, and is difficult to arrange tastefully with other plants. We have only found it serviceable for one purpose or position, and that is when the pot can be wedged into a corner and the whole of the plant exposed to the front. We may pass *Thrinax elegans*, *Chamærops excelsa*, *Corypha australis*, and others of this style of growth as too formal and heavy for general purposes. A few plants at times may be found useful in positions where it would not be unwise to use those of a valuable and tender nature. Again, the plants can be stored in any cool house when they are not wanted. This certainly is an advantage, and a few therefore of these may be grown for supplementary purposes.

—GROWER.

Lilium Humboldti.

THIS Lily, when seen in good condition, is probably one of the most attractive members of the genus. This is saying a good deal, perhaps, when we remember that such a remark applies to a family of bulbous-rooted plants full to overflowing with countless gems resplendent in their richness, and unparalleled in their unique beauty and great variety. It is one of those species that linger long in one's memory when once a giant plant has been seen crowned with its many flowers so telling in the scenery of any garden, and so attractive to the on-looker; and how we all long, when once a fine plant has been seen, to do something similar, or even surpass it if such be our good fortune.

Under cultivation *Lilium Humboldti* is not difficult to manage by any means when once it becomes established, but it certainly is not an easy one to establish. I say this plainly, and I should like to impress the fact on your readers for this reason. Many amateurs in plant culture are not satisfied unless they can behold some outward sign of life—some recompense for their outlay. A natural desire surely, but applied to Lilies and Lily growing must be soothed over with a little oil of patience. A bulb of the Lily under notice, planted with the best care, will not make a great show in the first year, and perhaps not the second. Then it is uprooted to know the reason why; hence so many failures with this species. From time to time I have planted some grand bulbs, and in the first year the growths have hardly ventured above ground, so to speak, but I did not lift them, for I knew the growth would improve next year. Of course, like others, I have had my season of fears and doubts, long since lessened by continued experience, and my advice to all planting this Lily, having secured really good bulbs at the start, is to exercise plenty of patience afterwards.

In all cases plant dormant bulbs, or such that are well established in pots. If the bulbs are imported they will be more or less shrivelled, and after shaking away sawdust or similar matter from between the scales close the latter carefully to the bulb, and press some sand round about them to keep them in position. Contact with the moist soil will soon remedy this, but where much shrivelled it will be as well to place the bulbs in moist sand for twenty-four hours before planting them finally. The soil best suited for this Lily is one of peat, leaf soil, rough fibrous loam, and some charcoal, the three first in equal parts, and a peck of the latter to a barrowful of the mixture. Sharp silver sand

may also be used with a liberal hand. Good drainage is an essential detail in Lily culture, so that the copious supplies of moisture at the right season may pass off freely.

Soils that are naturally much drained are assisted by the free use of

height of 5 feet. The colour of the flowers is rich reddish orange, the segments being freely veined with purple, while the variety ocellatum has a yellow perianth freely dotted with purple. Plant in a sheltered spot, protected from hot sun, and either by small sandstone chips or



LILIUM HUMBOLDTI.

sandstone as a moisture-retaining agent. Cover the bulbs in planting quite 6 inches deep, laying them flat on the soil. The number of flowers usually obtained from a good specimen is from six to twelve, but it is capable of producing thrice that number, and attaining a

loose litter cover the surface to stay evaporation. This and other Lilies succeed on the lower parts of Rhododendron banks, where they get the necessary moisture, while the numerous fibrous roots of the shrubs appear to supply the requisite drainage to a nicety.—E. H.



Berberis Thunbergi.—One of the most useful ornamental shrubs in cultivation is the Japanese Barberry, *Berberis Thunbergi*. For the purpose of a dwarf hedge it is the best known plant in use. It makes a pretty specimen singly on a lawn appropriately located, or in masses bordering shrubby plantings. The foliage is small, neat, and colours richly in autumn, when the plant is further ornamented by scarlet berries. Further, it is very hardy, and stands almost any position. It is undoubtedly an all-round plant.

English Ivy for Shady Places.—Mr. Meehan says, "The need for a climber that will thrive in shady places is often felt, and perhaps no other meets the want better than the English Ivy, *Hedera helix*; in fact, as between full sunlight and moderate shade, it will prove more satisfactory in the latter position; during the winter the sun is injurious to the evergreen foliage. Under greenhouse benches in rather dark places, through open cellar windows into a house and beneath trees, this Ivy has been seen luxuriantly growing. For covering bare spaces beneath trees it is most excellent."

Irregular Growth of Seeds.—It is a common experience, says a writer in a transatlantic contemporary, to have seeds come up irregularly. Some come up in a few days after sowing—others not for weeks; and, in nursery culture, many will not come up till the following year. Many unsatisfactory reasons have been given for this. Mr. W. C. Steele of Switzerland, Florida, has been making tests by soaking seeds in water. Bony seeds have been three months in water, and some will swell and germinate at various periods before this time has been reached. As the seeds were from the same tree, gathered at the same time, it must be evident that the peculiarity is in the seeds themselves, and has little reference to the treatment by the cultivator.

Strawberries in Pots.—The earliest plants are now ripening their fruit, and should have a drier and more freely ventilated house, but there must be no sudden change, or the fruit will not ripen well. For swelling, the temperature should be 65° at night, and 70° to 75° by day, advancing to 80° or 85° with sun, and plenty of atmospheric moisture, and after the fruit changes colour the atmosphere ought to be kept cooler and drier, so as to insure flavour. The second stock of plants have set well, and been thinned, a matter too frequently neglected. This enables the plants to produce large fruit, half a dozen being better than a dozen small, but regard must be had to the variety and the requirements. Give liquid manure copiously as often as required, examining the plants twice a day, in bright weather thrice, for the purpose. Plants in vineries and Peach houses are coming on successionally, and need not be moved except to meet special requirements. Strawberries of the larger varieties placed in span-roofed frames afford grand fruit a fortnight to three weeks earlier than those in the open ground.—A. G.

New Formula for Spraying.—Trouble is sometimes experienced in spraying with Bordeaux mixture with the clogging of the pump nozzle. Professor Prilleaux, National Agronomic Institute, Paris, strongly recommends saccharate of copper in place of both Bordeaux mixture and ammoniacal solution of carbonate of copper for use as a fungicide and germicide in spraying. The formula is as follows:—"Forty-five gallons of the spraying liquid slake and make into 'milk of lime' 4 lbs. of quicklime; dissolve 4 lbs. of molasses in a gallon of water and mix with the milk of lime. This will make a solution of 'saccharate of lime.' Stir thoroughly, and let stand for a few hours. Next dissolve 4 lbs. of bluestone in eight gallons or ten gallons of water, and pour into it the lime-molasses solution, while stirring briskly. This mixture becomes very turbid with the gypsum formed, which may be allowed to settle, leaving a clear, greenish solution of 'saccharate of copper,' which may be drawn off from the sediment, thus obviating all danger of clogging the spray nozzle, and leaving no discoloration on leaves or fruit. If it is to be used on leafless trees, it may be at once thinned down to the twenty-five gallons wanted, since even thus the liquid is much thinner than the Bordeaux mixture of equal strength." Further experiments will be made during the coming year by the American Department of Agriculture with this spray.

The Tuberation of the Potato.—A very interesting fact about the Potato plant has been observed by M. Bernard and communicated to the Académie des Sciences. It was known that the roots are attacked by a fungus, the fusarium, and when M. Bernard sowed Potato seed in soil sterilised by this fungus he discovered that the roots had no Potato tubers on them. It seems that the normal Potato plant does not yield Potatoes, which are a result of the fusarium. This agrees with the observation of Clusius, who, long before Parmentier, introduced the Potato into Europe, and found it did not yield tubers at first. The soil, it seems, had not been invaded by the fusarium.—("Globe.")

Rain Gatherers.—It is a fact worthy of note that the Russian Government is planting the great dry steppes of Southern Russia with trees, in order to bring a little humidity to the land, so often parched by drought. Somebody has said that our agriculture has been saved from the evil effects of deforestation only by the inherent humidity of the climate. Whether that be so or not, it is certain that the rainfall in many English districts is not what it once was, owing to the clearing away of many square miles of woodland. Our own droughts in summer, though, happily, not comparable with those of Southern Russia, are very inconvenient at times. Should the English people ever try to become largely self-supporting as timber consumers, by planting with trees their three millions acres of waste land, no doubt the rainfall of the country would greatly increase again—though scarcely in our time! Though trees perspire largely and gather much water, they do not, says a writer in a daily paper, let it go in the form of evaporation at all readily. The coniferous trees are not such friends of humidity as the Oak, Beech, and various deciduous trees. Yet they, too, preserve moisture. The leaves lying on the ground form a non-conducting stratum of considerable thickness. Again, Firs planted in dense masses prevent evaporation to a large extent.

Trees in the London Parks.—Mr. George Cadell (late Indian Forest Department) writes to the "Morning Post" on this subject as follows:—"It is reported that the depredations of moths are causing considerable damage to the trees in the London parks, the subjects attacked being, as was to be expected, either in an incipient or advanced stage of decay. The principal offender is stated to be the goat moth. Now, this insect can be destroyed in several ways—in the state of eggs, caterpillars, chrysalises, and butterflies. The cost of the first plan of attack is the greatest, the eggs being frequently deposited on lofty branches, which are not easily reached. But a girdle of tar round the trunks of the trees forms not only an effectual safeguard, but a deadly trap for the caterpillars, who are thereby prevented from obtaining their necessary sustenance. The chrysalises can be gathered from the branches on which they are fixed, and the butterflies can be destroyed by lighting fires at night, to which they are attracted, only to fall into the flames. Lastly, nesting boxes for the natural enemies of the larvæ, such as the starling and the tit, can be erected. The form of nesting box, which is designed to protect the inmates from cats and other animals, and which is extensively used on the Continent, can be seen at the Forestry Museum at the Surveyors' Institution, Great George Street, Westminster."

Flora of Vermont.—Some interesting statistics of Vermont plants come from the Vermont Experiment Station. These figures are taken in part from the New Flora of the State, published by the Vermont Botanical Club. According to this publication there are now 1563 species of Ferns and flowering plants known to occur uncultivated in Vermont. Of these, seventy-nine species are trees, including eleven species of Oak, seven kinds of Maple, six Poplars, four Pines, and four Birches. These are mostly useful, but there are eighty species of weeds, some of which are pernicious and promising trouble. Out of the present census of 1563 species 270 have moved into the State since the country was settled. Many of them have come mixed with agricultural seeds, or have been introduced directly or indirectly by artificial means. It is interesting to notice how the number of known species has increased in recent years. When the first list of Vermont plants was published by Oakes in 1842 there were 929 species known. Torrey's list of 1853 gave 1034, and Perkins' list of 1888 gave 1360. In each case, says the "American Agriculturist," some plants were included by mistake, so the increase since 1888 is more than the difference between 1563 and 1360. Most of the additions are of species which have doubtless been here all the while, but have only recently been discovered. A few, however, represent species which have come in during comparatively recent times.

The Indian Fig.

THIS, the Cactus *Opuntia* of botanists, is one of the cosmopolitan plants, for I have seen it growing in the open air of Europe, Africa, and Asia, and know those who have seen it similarly thriving both in South and North America. Our earliest writer on plants, Lyte, knew little about it, for although in 1578 he published a tolerable woodcut of it, he had no more to say relatively than that it is "a strange kind of plante which cometh forth of one leaf set in the ground, and sometimes it groweth high, and is named of Plinie, *Opuntia*, now in these dayes *Ficus indica*"—that is the Indian Fig, a popular name it still retains. Gerarde tried in 1583 to induce it to bear fruit, but, he adds, "never as yet, although I have bestowed great pains and cost in keeping it from the injury of our cold clymat." We now know that on this plant the cochineal insect is reared; but Johnson, who edited a later edition of Gerarde's "Herbal," thought that these insects were transformations of the plant's substance. He says: "Upon this plant in some parts of the West Indies grow certain excrescences which, in continuance of time turn into insects, and these outgrowings are that high-prized cochenell wherewith they dye colours in graine." This error was soon dispelled, and the true history of the cochineal insect and its cultivation were made known. I have seen at the Cape of Good Hope hedges entirely formed of this plant, and most formidable opponents they were to anyone attempting to pass through them. This species is sufficiently hardy to bear our winters without protection provided it is planted in a dry soil. It is well suited to ornamental rockwork, and flowers in June and July.—G. J.

Coniferae.

(Continued from page 460, last vol.)

WE have given a few interesting particulars of the natural order Coniferae in previous notes, and will now give a list of trees and shrubs that will be found suitable for various purposes. We will begin with the *Retinosporas*, or Japanese Cypress. There are many forms now in cultivation, as a glance through any good catalogue of ornamental trees and shrubs will show. Most of them are referable to two species, *Retinospora obtusa* and *R. pisifera*. They are all handsome, rather dwarf, and neat growing Conifers, the different varieties assuming very distinct colour and habit. They are useful for decoration in winter, being quite hardy, and are suitable for filling vases, window boxes, or pots. Many of the *Retinosporas* make a dense growth, and are very liable to injury from heavy falls of snow; they should therefore be relieved of it as soon as possible when it is practicable.

R. plumosa is a dense tree of conical habit and moderate growth; the branches are numerous, and thickly furnished with lateral shoots; the leaves, which are of a deep green colour, are awl-shaped and much pointed, which makes the trees rather prickly, but not so much so as the Junipers. There are several varieties. *Aurea* is very distinct, and grows almost as rapidly as the type. Its terminal shoots when first formed are of a light golden yellow, which gets greener as the season advances and till it is succeeded in the following spring by a new yellow growth. *Argentea* is not such a strong grower, nor its habit so dense, but it is a desirable variety; nearly the whole of its young growth is creamy white, which becomes green on attaining maturity, but not before it is succeeded by the white growth of the following season. *Albo-picta*, instead of having the whole of the new growth white, has the tips of the branchlets white, which gives the

plant a speckled and spotted appearance. All these plumose varieties are beautiful plants for garden decoration, and are among the best of Conifers for formal gardens. They are easy to grow, but do not thrive so well in very exposed situations.

R. squarrosa is not so formal in its growth as the preceding; the stem is much divided and forked, and furnished with numerous branches, so that the plant takes the form of a dense bush. Its foliage is of a bright glaucous green, suffused with a tint of almost silvery whiteness, quite unlike any other coniferous tree. The leaves are needle-shaped and curved. I consider this the most handsome of the *Retinosporas* with which I am familiar. *R. filifera* is quite a different tree to any of the above. In its young state at any rate it is broadly conical, with long spreading branches; the branchlets, which are thin and thread-like, are rather thinly disposed; the leaves are pointed, distant, in alternate pairs, and fulvous green in colour. It makes a light and graceful specimen, and does not appear very particular as to the kind of soil it has to grow in.

Junipers.

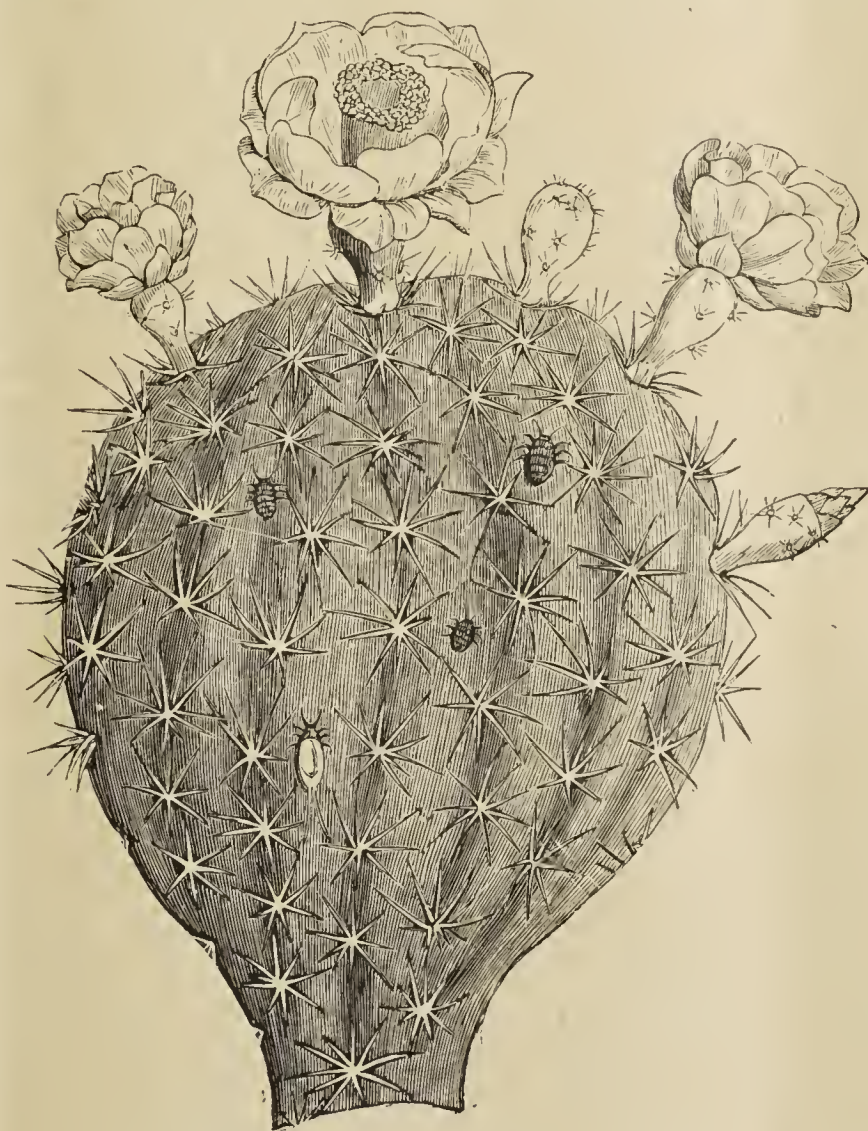
Junipers are small trees or shrubs, having either small scale-like, or spreading, stiff and pointed leaves. Sometimes both kinds are found on the same plant. *Juniperus communis*, the common Juniper, is an indigenous species generally dispersed over the British Isles, but more common in the north than in the south. It is a very variable plant, and there are several varieties. Perhaps one of the best known is *hibernica*, the upright Irish Juniper. The branches are erect, with numerous rigid, close-set, erect branchlets; the leaves are shorter and deeper green than in the common kind. This is a desirable shrub, and although one of the upright-growing kinds, it is not at all a formal plant, as some of the branches spread outwards, further than others. Its habit is more columnar than pyramidal, and it will grow from 15 to 20 feet high.

Juniperus sabina is the common Savin. In this country it only attains the size of a few feet, but is found, as a tree, in some of the Greek islands. This is one of the small-leaved kinds, but branches may be found occasionally with acicular leaves. It is a mountainous plant, and thrives best in light soil in sunny and airy situations. It is a capital plant for clothing a bank or planting in the background of a large rockery, and may also be used in the front of the shrubbery. There are a few varieties—*tamariscifolia* is a dwarfer plant with foliage

of a brighter green; and *variegata* has many of its branchlets creamy white or pale yellow.

Juniperus virginiana, the Red Cedar, is said to be the tallest and hardiest of the genus. It is a very variable tree, both in the form of its leaves and their colour; and to examine, say, a dozen young trees, some of the number would seem altogether different from others. The wood is of a close fine texture and reddish colour, very bitter to the taste, odoriferous, and avoided by all insects; hence it is much employed by cabinet makers in America. It is also imported into this country for the purpose of making black lead pencils. The glaucous form has a more graceful habit than the type, and appears to make a denser tree. The stem is thicker, which perhaps may be the reason of its withstanding rough weather better. There is also a variegated form, as well as others.

The Chinese Juniper, *Juniperus chinensis*, is not so tall a tree as *virginiana*, its height being from 20 to 25 feet, which is about half the height of the latter. It occurs in two varieties, the male and female, which differ from one another in the form of their branches and leaves. They are beautiful shrubs for ornamental planting, and are quite hardy. The branches are more erect, and the leaves longer and more sharply pointed than *virginiana*, but this species has also scale-like leaves as well. There are yellow and variegated forms.—PINUS.



THE INDIAN FIG.

Royal Horticultural Society.

Drill Hall, February 26th.

THE exhibition at the Drill Hall on Tuesday was a most excellent one. The groups were numerous and of exceptionally good quality. Orchids were particularly interesting, while fruits were contributed in small numbers.

Fruit Committee.

Present: G. Bunyard, Esq. (in the chair); with Messrs. H. Balderson, G. T. Miles, G. Kelf, J. W. Bates, S. Mortimer, A. Dean, J. Wright, W. Fyfe, E. Beckett, C. Herrin, J. H. Veitch, W. Poupart, H. Somers Rivers, G. Norman, J. Willard, A. Ward, G. Wythes, J. Smith, E. Shaw Blaker, and the Rev. W. Wilks.

A collection of Apples came from C. P. Serocold, Esq., Maidenhead, which were staged in a well-kept condition. Baxter's Pearmain, Brownlee's Russet, Egremont Russet, Melon Apple, American Mother, Fearn's Pippin, Northern Spy, Baddow Pippin, Mannington's Pearmain, and Cox's Orange Pippin were all in capital condition, as was also a grand dish of Catillac Pears (silver Banksian medal). Mr. J. Miller, gardener to Lord Folev, Ruxley Lodge, Esher, sent a basket of well-grown Mushrooms. Mr. W. Crump, gardener to Earl Beauchamp, Madresfield Court, sent eight dishes of Apples, the best being Chatley's Kernel, Waireham Russet, Rymer, Margil, and Nonpareil. Several other contributors also sent single dishes which call for no comment.

Floral Committee.

Present: W. Marshall, Esq. (in the chair); and Messrs. O. Thomas, H. B. May, R. Dean, G. Reuthe, J. Hudson, J. F. McLeod, C. R. Fielder, C. Dixon, C. E. Pearson, R. C. Notcutt, J. W. Barr, C. E. Shea, E. H. Jenkins, H. J. Cutbush, H. Turner, G. Paul, W. Howe, J. Jennings, C. T. Druery, H. J. Jones, C. Blick, and E. T. Cook.

Messrs. W. Paul & Son, Waltham Cross, once again demonstrated their skill as growers of Camellias by staging a grand collection of plants in pots, and numerous boxes of cut blooms; it was unfortunate, however, that the exhibit had to be divided into two parts, and one part at least in the worst part of the hall, as far as light is concerned. The plants were splendid specimens of cultural skill, and beautifully flowered; some of the best were Boadicea, Exquisite, Fimbriata, Marchioness of Exeter, Alba Plena, and Mathotiana alba. The most conspicuous of the cut flowers were Imbricata, Mathotiana, Lady Hume's Blush, Marchioness of Exeter, Princess Charlotte, Halleyi, Reine des Fleurs, and a box of Alba Plena. The plants were well arranged with a groundwork of Aralia Sieboldi and Ferns (silver-gilt Flora medal). A pretty semicircular group of forced shrubs came from Messrs. B. S. Williams & Son, Upper Holloway, which consisted of standard Lilacs in variety all full of flower, Charles X. and Marie le Gray being especially notable, as were also good bushes of Staphylea colchica, Spiraea confusa, Azalea mollis in variety, and Malus floribunda Scheffer-deckeri. A pretty spring flowering group (silver Flora medal).

Messrs. H. Cannell & Sons, Swanley, arranged a small group of Cineraria stellata. The plants were well grown, and the strain is undoubtedly a good one, the range of colour being very wide, while the shape of the blooms clearly exhibits signs of improvement in the right direction. Messrs. Barr & Sons, King Street, Covent Garden, were represented by a pretty group of Narcissi and other spring flowering plants. The Narcissi in pots included such popular varieties as N. odoratus rugulosus, Queen Bess, Harbinger, Albicans, Henry Irving, Telamonius plenus, Sir Watkin, Frank Miles, Golden Spur, Cernuus, Victoria, Princess Ida, and Barri conspicuus, while the other notable plants were Crocus susianus and C. Olivieri—a deep orange variety. Irises persica Heldrieichi, reticulata, orchioides, and Mardiensis were most interesting; a collection of Snowdrops and Hellebores completed the display (bronze Flora medal). Messrs. J. Laing & Sons, Forest Hill, staged a table of flowering and foliage plants. The former were represented by some well flowered plants of Azalea indica, Cyclamens, Acacia dealbata, and a few Ericas, while Palms, Crotons, Bambusas, and Ferns were attractive (bronze Flora medal).

Messrs. G. Jackman & Son, Woking, contributed a large display of spring flowering plants, the Daffodils in pans being especially attractive, and were represented by N. princeps maximus, Sir Watkin incomparabilis sulphurea fl.-pl., Autocrat, Emperor, and Horsefieldi. The pans of Galanthus Elwesi, Grape Hyacinths in variety, and Daphne Blagayana were much admired, while a number of rock and alpine plants in bloom made a pretty finish (bronze Banksian medal). A gorgeous table of Cyclamen came from Messrs. H. Cannell & Sons, Swanley. The plants were all covered with blossoms, which extended through a wide range of colours, such as pure white, pink rose, red and crimson. The strain is undoubtedly a good one (silver Banksian medal).

Messrs. Wm. Cutbush & Son, Highgate, occupied a table running the entire length of the hall with an exhibit of Narcissi, arranged with a few Palms. The Polyanthus section was well represented by good flowering plants of Her Majesty, Laura, Queen Victoria, States General, Jaune Supreme, Gloriosa, Bazalman Major, Grand Soleil d'Or, Newton, Grand Monarque, and White Pearl, while there were a goodly number of each variety staged in the other sections, a few of which were N. Leedsii Queen of England, Incomparabilis, Cynosure, Orange Phoenix, Wm. Goldring, Emperor, Excelsior, Victoria (extra good), Empress, Princeps, Horsefieldi, and Queen of Spain, all in excellent condition (silver-gilt Banksian medal).

A very interesting collection of rock and alpine plants came from Messrs. T. S. Ware, Ltd., Feltham, but they were too dispersed to be effective. Saxifraga Burseriana was well flowered; Primulas in variety, such as obconica, floribunda, and P. f. Isabellina were excellent, while Hepatica triloba cœrulea with its blue flowers were welcome; the little pots of Cyclamens and Irises contributed largely to the display (silver Banksian medal). Messrs. Paul & Son, Cheshunt, staged a grand plant of the double Cherry Jas. Veitch which was carrying masses of its pink flowers. A pretty exhibit of Hellebores was staged by Mr. F. H. Archer Hind, Coombe Fishacre House, Newton Abbot, the blooms were clean, well developed, and evidently came from a congenial soil.

Messrs. R. & G. Cuthbert, Southgate Nurseries, exhibited a magnificent display of spring-flowering plants. The group was composed of a number of standards and bushes tastefully arranged in a bed of bright Azalea mollis and other plants. The standards deserve more than passing notice, for they were beautifully developed. The Azalea mollis comprised most of the popular varieties, such as A. m. Victoria, Comte de Quincey, Alphonse Levallee, Consul Pecher, Comte de Papadopoli; while Lilacs and Staphylea colchica were well represented. Well-flowered plants of Wistaria sinensis were unique at this season, and standard Ribes in pots are also somewhat rare. The Azaleas composing the groundwork were excellent in every way, and the whole exhibit was enhanced in value by a few Palms and Ferns used judiciously (silver-gilt Flora medal).

Messrs. R. Wallace & Co., Colchester, staged a small but interesting exhibit, which included pans of Iris reticulata major, Galanthuses Ikariæ, G. Elwesi var. Whittalli, and G. plicatus, Adonis amurensis, and Muscari præcox. Mr. G. Squibbs, gardener to Lady William Wynne, Oswestry, sent pots of Violets, the beauty of which was effectually destroyed by the large labels placed in the pots. The varieties were the Dowager Lady W. Wynne, a good pale lavender; New York, Comte de Brazza, and Marie Louise. Messrs. Jas. Veitch and Sons, Ltd., Chelsea, staged a small group of Cineraria polyantha Feltham Beauty, a good rosy purple form; also a group of C. p. compacta, a strain possessing a compact habit and a good variety of colours, certainly more effective for conservatory decoration.

Orchid Committee.

Present: H. J. Veitch, Esq. (in the chair); with Messrs. J. O'Brien, T. W. Bond, de Barri Crawshay, H. M. Pollett, H. Ballantine, H. Little, F. Sander, H. J. Chapman, H. A. Tracey, H. T. Pitt, W. Thompson, J. W. Odell, F. A. Rehder, J. Colman, J. Douglas, E. Hill, and F. J. Thorne.

Mr. E. Beckett, gardener to Lord Aldenham, Aldenham House, Elstree, Herts, exhibited eight plants of Cœlogyne cristata in variety. The specimens were in large pans, and were covered with magnificent flowers. They represented excellent culture. The plants were backed by the graceful but somewhat uncommon Thyrsacanthus rutilans (silver Flora medal). Mr. J. Lupton, gardener to J. Rutherford, Esq., Beardwood, Blackburn, arranged a small group of Orchids in variety, including Odontoglossum crispum and Cattleyas (silver Flora medal).

A very effective group of Dendrobiums was staged by Mr. W. P. Bound, gardener to Jeremiah Colman, Esq., Gatton Park, Reigate. A few other Orchids added beauty and interest to the group (silver Flora medal). Messrs. H. Low & Co., Bush Hill Park, showed Dendrobium Wardianum, D. Wardiano-japonicum, D. nobile Cooksoni, Cattleya Trianae, pale variety; and Cypripedium callosum Sanderæ.

A most beautiful group of Orchids was arranged by Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking. The plants comprised splendid grown plants of Dendrobiums Cybele, melanodiscus, m. pallens, m. Luna, Juno, nobile Burford variety, The Pearl, rubens grandiflorum, Odontoglossum Edwardi, Sophronitis Rossiteriana, Odontoglossum excellens, Oncidium leucotes, Cypripedium hirsuto-Sallieri, with a few others, and some superb spikes of Phalaenopsis (silver-gilt Flora medal).

Messrs. J. Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea, were represented by a very beautiful group of miscellaneous Orchids, including Lælio-Cattleya callistoglossa, L.-C. c. rubescens, L.-C. Dominiana langleyensis, L.-C. Pallas, L.-C. coronis, L.-C. nigra, Cattleya Empress Frederick, C. Mrs. M. Gratrix, Dendrobium Cordelia, D. Ainsworthi, D. splendidissimum, D. euosmum leucopterum, D. splendidissimum, D. sosius, D. Schneiderianum, D. Cybele, D. endocharis, D. Wiganii, Epidendrum Clarissa, Cypripedium Germinyanum, C. eximium, C. Actæus, C. Schröderæ candidulum, C. Captain Holford, C. Tityus, C. euryades, Phaius amabilis, and several others (silver-gilt Flora medal).

Messrs. J. Cypher & Co., Cheltenham, staged a few Dendrobiums of splendid quality. They included several varieties of splendidissimum, nobile Cooksoni, Virgil, nobile elegans, barbatulum, Burberryanum, nobile nobiliss, Leechianum, and atro-violaceum (silver Flora medal). Numerous miscellaneous Orchids were contributed by Messrs. T. W. Bond, Le Breton and Warpur, J. S. Moss, J. W. Wilkinson, J. Gurney Fowler, A. Chapman, J. T. Bennett-Poë, E. Hill, and C. J. Lucas.

Certificates and Awards of Merit.

Adonis amurensis (R. Wallace & Co.).—A fine Adonis. The foliage is elegantly cut, and the flowers bright yellow (award of merit).

Apple Scarlet Nonpareil (W. Crump).—This variety is too well known to call for any description (award of merit).

Apple Diamond Jubilee (A. J. Thomas).—A handsome Apple partaking of the character of Alfriston. We hope to illustrate and describe this variety in an early issue (award of merit).

Dendrobium Euryalus var. (W. H. White).—This is a handsome Dendrobe; the sepals and petals are white at the base and rich rose above. The lip is tipped rose banded with white, and the throat crimson black (award of merit).

Iris Tubergeniana (Miss Willmott).—A dwarf growing greenish yellow species; the leaves have a silver thread round the margins (award of merit).

Lælio-Cattleya warnhamensis (C. J. Lucas).—A superb bigener. The sepals are rich orange, and the petals orange crimson. The lip is velvety maroon, while the throat is rich yellow (first-class certificate).

Odontoglossum Adrianæ Mrs. Robert Benson (Capt. Holford).—A finely marked variety. The basal colour is white deepening to sulphur at the margins, and with numerous spots and blotches of brown (award of merit).

Odontoglossum Coradenei Mrs. de Barri Crawshay (de Barri Crawshay).—A handsome form; the ground colour is soft yellow and the large blotches shining chocolate brown (award of merit).

Phaio-Calanthe Schröderiana (J. Veitch & Sons).—This is from a cross between Phaius Wallichii and Calanthe Baron Schröder. The sepals and petals are cream with rose at the base. The lip is crimson rose (award of merit).

Sophrontitis Rossiteriana (W. H. White).—To say that this is a yellow *Sophrontitis grandiflora* is sufficient description (first-class certificate).

The Making and Unmaking of Flowers.

At the afternoon meeting in the Drill Hall on Tuesday the Rev. Professor George Henslow, M.A., V.M.H., gave a most admirable discourse on the making and unmaking of flowers. There were considerable numbers of Fellows present, including many ladies, and they could not easily have chosen a more interesting topic to listen to. Mr. Henslow is a most pleasant speaker, and his "talks" on some of the plants exhibited are looked forward to by many regular visitors to the Drill Hall. On this occasion he diverged somewhat from his more familiar path, and spoke fluently for three-quarters of an hour upon the building up by various natural processes of the different types of flowers. Though Mr. Henslow delivered an extempore address we trust the crucial points will be embodied in a paper for publication in an early issue of the Journal of the Royal Horticultural Society.

A Practical Guide to Garden Plants.

THIS is a large and a very useful book. In respect of matter it cannot be regarded as an original work. The same might, however, be said of a catalogue, in which the materials are as old as the hills, and the arrangement is priceless. Presumably this publication is put forth as a work of reference for skilled gardeners. Indeed, the price and the arrangement of the subjects, being scientific rather than alphabetical, indicate that it is not intended to rank with the cheap and popular manuals, of which we see specimens appearing every half year. Both descriptions of these works, however, serve a useful purpose. In the case of our present subject of notice, the intention of the writer is evidently to produce a book which appeals to the young and scientifically educated gardeners, of whom we see a new school arising; or to the botanist, who is not superior to becoming a practical horticulturist. In short, it is significant of the decay of the feud between the real and the ideal, and the union of the practical with the theoretical.

The notion of arranging the plants indigenous to or mostly cultivated in the British Isles according to their natural orders, substituting vernacular for the usual classical titles, is apparently an evidence of the desire to bridge over the chasm which has hitherto separated the gardener from the botanist. In some cases this works fairly well, as in the case of the Poppy, the Carnation, the Lily, the Narcissus, the Flag, the Primrose, the Orchid, and the Heath orders. In others the dissimilarities do not justify the grouping under colloquial names. Thus the Wallflower, the Rose, and the Daisy orders seem somewhat indefinite and misleading, particularly the second, which should have a fruity rather than a floral sobriquet. But when it comes to the Rhubarb, the Forget-me-not, and the Foxglove orders visible analogies fail us; while to prefer the Laburnum to the Pea or the Bean order, or the Nightshade to the Tobacco or the Potato order, is no improvement. However, we must take the will for the deed, as it will always be impossible to cover many genera with an adequate single title. The book is to be recommended as a storehouse of valuable information logically and cleverly arranged; but it is not for the neophyte. It is intended for the head gardeners of the future, who will find it a good companion at leisure moments; but they will require to have had long experience of large gardens, large estates, and the finest exhibitions to read it otherwise than as a work of reference.

* By John Weathers, F.R.H.S. Longmans, Green & Co., 39, Paternoster Row, London. Price 21s.

Exacum macranthum.

THIS *Exacum* has just claim to be placed amongst the most beautiful of stove plants, and it is a regrettable fact that it is so seldom seen. The plant is of comparatively easy culture, neat in habit, and generally grows to about 18 inches in height. When laden with richly coloured flowers, that can compare favourably with any other occupant of the stove, the plants present a most charming sight.

The blooms are about 2 inches in diameter, the corolla being divided into five broad ovate segments, slightly recurved, terminating in a rather sharp point. Their colour is of indescribable richness, being a rich indigo purple with a satiny sheen; the flowers, which are borne on a terminal corymb, being the more striking by the deep yellow prominent anthers. The leaves are opposite, those on the upper part of the stem being sometimes 3 inches long and an inch wide, tapering to both ends; the lower leaves are smaller and less pointed. They are bright green and slightly ribbed. It was found in Ceylon at an altitude of 6000 feet, and, though still rare, it is worthy of being largely increased and widely distributed.

Grapes Again.

GRAPES again. Issue after issue of our Journal proclaims something new. Surely there cannot be much more to reveal. Really, however, one never tires of reading about Grapes, and every year, as we look upon the glorious models of cultivation at the various shows, the thought naturally occurs to one that those men must have digested every fact published in bygone pages of our Journal, and discovered in their practice everything worth knowing to have become such masters in the art. Would that all our young gardeners took a lesson from them. But when you come to look closely you will find that as year succeeds year the same names are in the winning lists. Now and again a young enthusiast leaves the crowd, and makes a bold stand with credit to himself. But what of the hundreds that are annually becoming heads for the first time, with every facility and encouragement given?

Few seem to realise how much they could accomplish by a little industry and perseverance. As we travel here and there, visiting every garden possible, in the expectation of seeing something new, how often do we see Vines neglected or misunderstood, and miserable examples, mere apologies for Grapes? One cannot help having a feeling of sympathy with the man who could and is anxious to improve matters, but is debarred by the apathy of his employer, and a feeling of contempt for the idler who, blest with a generous employer and no lack of means, squanders his time, being content to leave his Vines in charge of careless men or youths. Again, there are other cases where the man is young, possibly recently entered on his first charge. He finds himself confronted with new conditions, ever so many new duties, work staring him in the face at every turn, and the Vines in a wretched state. The latter should have precedence, and he naturally wonders what should be done for the best, yet he hesitates to throw them out and plant a young stock. It is for this class of worker that I should like to write a few lines describing how the writer has met such a case, and also a few cultural hints in the hope that some reader "with a parallel case" may take courage and time by the forelock, instead of wasting it in vain regrets.

On taking up my present charge, one June morning some time ago, I found the Vines much as I have described. They seemed to me to be the oldest Vines I had ever seen, with knarled and twisted spurs from 6 inches to a foot in length. I subsequently found out that they were about thirty-five years old. Nevertheless they were bearing several small bunches, and though not satisfactory there was no appearance of any disease; nor was there shanking, therefore I considered them capable of improvement. I consulted my employer, and he, though anxious to have good fruit, was rather sceptical of my ability to make any great improvement, and was reluctant to incur any expenditure in the matter. At last, however, I got him persuaded to let me have my way. It is well in commencing work of this sort to look a long way forward, and see your way clearly. Two points of almost equal importance suggested themselves to me; one, the greater, was that I must have a supply of Grapes for some period of the year; the other was that I must for my reputation as a gardener effect an improvement.

I had only two vineries. Commencing with one, as soon as the crop was gathered I cut down the rods, cleared away all the border soil, and rectified the drainage with fresh and clean material. There being plenty of turfy loam near by I had it chopped up roughly and carted up to the border, also a quantity of lime rubbish, plaster from an old building, in a proportion of one to six. I also had a few barrowloads

each of charcoal and wood ashes, bones and artificials were out of the question; after mixing well I made the border, only 3 feet wide the first year, and 2 feet 6 inches deep. I purchased the necessary Vines from a well-known firm, demanding well-ripened yearlings at best prices. These, on arrival, I pruned to about 3 feet, and placed them in a cold Peach house. In the beginning of April, as the buds showed slight expansion, I turned them out of their pots into a large tub of tepid water, and with a little careful manipulation the roots were soon divested of soil, and thereby I was able to spread them out evenly in planting, covering the roots with 4 inches of fine soil previously prepared. Doubtless the experienced reader will think it inconsistent with good practice to leave the rods so long, but my border being entirely outside I had to put them through a wall, and the extra length enabled me to do this, and also bring the leading buds up to the light, about 2 feet from the roof glass. I gave very little fire heat, and they made good progress the first season, but with one or two exceptions I cut all back to the bottom of the rafter. Next season they made fine growth, as thick as your finger, and I have every hope of securing exhibition fruit; those that were cropped the first year bore three bunches each. The Grape was Madresfield Court.

I will now return to those I left for keeping up the supply, commencing with border and roots. I once saw a good gardener "who was formerly a pupil of a notable Grape grower," do something which at the time I could not understand, and which now I think a useless waste of money—namely, putting large doses of artificial manure on an outside border, when the roots were not within 2 feet of the surface. Using artificials thus, when the feeding roots are probably 20 yards away, is on a par with putting a poultice to your feet for toothache. Not having any money to spare I had to try some other way. Towards the end of September I cleared away all the soil 4 feet from the aperture in the wall, deep enough to expose a few roots. These I notched in several places, covered them with a sprinkling of sand, and filled in with a rich compost of loam, leaf soil, and old horse droppings. In pruning the Vines, also, I left the beaten track, leaving three or four buds on the strongest shoot on each spur, this on the lower half, the top portion being cut a bit closer. With the intention of leading up a young cane next spring I selected a well placed and promising shoot at the base and trained it up beside the spurs, suppressing all buds on the latter on one side of the cane for one-third its length as soon as I saw that the shoot was progressing. The young cane had an abundance of room for the first 5 feet, and I gave it all the light possible for the rest of the way. The extension given and the restriction to one shoot on each spur improved the crop considerably, and now I get Hamburgs 2 lbs. in weight. Another year saw 5 feet more of spurs cut out, this time on both sides of the Vine, and the appearance of one or two excellent bunches on the young canes. The work is not yet finished, but my labour is repaid, and I have moreover succeeded in winning the confidence of my sceptical master.

I may mention that I was rather sceptical about the results of the root-dressing, but on making an examination the following midsummer I found to my surprise abundance of fine roots in the compost. Regarding outside borders, I think that giving heavy soakings of water to them where the drainage is defective, as it generally is in old borders, may be advantageous in places where the rainfall is small, as in the south and eastern counties in England, but in the north and Scotland I question it very much. I should, however, like to hear what our experienced northern champions say to this. In conclusion, I trust all young gardeners will look at the matter seriously, and remember that one gains even by one's failures.—R. M. D.

Young Gardeners' Domain.

Hints on Strawberry Forcing.

THE forcing of Strawberries is such an important branch of a gardener's duties that a few notes on the details of the subject may be of value. Where there is not the advantage of a properly equipped Strawberry house, shelves in vineries or Peach houses are usually utilised for the purpose. If a range of successional fruit houses is available, and the shelves be filled with Strawberries at the time of starting the houses, an unbroken supply is insured. A very important point in Strawberry forcing is to start the plants gently, say in a temperature of 50°, gradually increasing the temperature as growth advances.

Remove all decaying foliage and wash the pots before introducing to the house. Water should be carefully supplied at first, but as growth becomes vigorous copious supplies are needed; indeed it is often advisable during bright weather in April and May to stand the plants in pans of water to guard against the risk of dryness, but a sour condition of the soil is detrimental to the well-being of the plants. As soon as root action has become vigorous, feeding must be resorted to and continued until the fruit shows signs of colouring. Either animal or chemical manures may be used, preferably in liquid form.

Green fly is rather troublesome on the young foliage, and should be destroyed by fumigation. Red spider may be kept in check by syringing, though this is rarely troublesome. Keep the atmosphere of the house rather drier during the flowering period and endeavour to secure a good set; brushing over the flowers with a rabbit's tail will aid fertilisation.

It may be interesting to notice here that the so-called fruit of the Strawberry is not botanically the fruit, but only the enlarged and succulent receptacle of the flower bearing the apocarpous one-seeded fruits or achenes (popularly called seeds) on its surface. This is an important point, as most gardeners will have noticed that their fruit sometimes refuses to swell regularly, becoming mis-shapen and deformed. This is due to imperfect fertilisation, and it will be noticed that where the receptacle is deformed the ovaries have not been fertilised.

Carefully guard against cold draughts from the ventilators, or mildew will certainly put in an appearance, particularly during the flowering period. We have always found it advisable, on the principle that "prevention is better than cure," to syringe or dip the plants

in water, in which some flowers of sulphur has been dissolved, on the least sign of the pest. Sulphur is not readily soluble in water, but if sufficient water be first added to make the sulphur into a thick paste no difficulty will be experienced in obtaining a solution. Remove the sulphur by syringing directly the fruit shows signs of colouring.

As soon as possible the fruit should be thinned, leaving from three to six fruits on each truss, according to the variety and the strength of the plants, but always the leading fruits. The trusses of fruit should then be supported with stakes; twiggy branches from old birch brooms are admirable for the purpose. They should be inserted in a slanting direction away from the plants, the fruits being allowed to hang from the twigs, no tying being required if the operation is properly performed. An old Scottish gardener of my acquaintance and an excellent fruit grower was very particular over this detail, saying, "A shelf of Strawberries not worth staking is not worth having," and rightly so, for if not properly supported the weight of the fruit will always bend the pedicels or stalks of the fruit and loss of flavour will be the result.

I have here confined my attention to the treatment of plants while in the houses; the preparation of plants for forcing may well form the subject of another article if the Editor desires.—E. C.



EXACUM MACRANTHUM. (See page 181.)



Fruit Forcing.

Melons.—In Houses.—For placing out young plants a ridge about 2 feet wide at the base, with the top flattened, so as to give a depth of about 10 or 12 inches, is preferable to hillocks. The plants should be $2\frac{1}{2}$ to 3 feet apart, according to vigour of variety. The soil must be firm, and when warm planting may be done, keeping the seed leaves clear of the soil. The leading shoots should be taken up two-thirds of the distance without stopping, then pinch out the point of each, and rub off the laterals to the height of the trellis. Some varieties show fruit freely on the first laterals, and as early fruit is a main feature in the case of the first plants allow them to remain, taking out the point of the shoot at the joint above the fruit at the time of fertilising the blossom. To allow all the laterals to remain would very much overcrowd the foliage, therefore rub off whilst quite young every alternate one.

Sprinkle the paths and walls in the mornings of hot days, and again at closing time or early in the afternoon. Ventilate carefully, avoiding cold currents of air, placing some hexagon netting or scrim canvas over the ventilators when the external air is sharp. Maintain a night temperature of 65° , 5° more in mild weather and 5° less in severe, a low night temperature being better than a high one and a dry atmosphere, yet it must not be of long duration, or the plants become stunted in growth. The day temperature should be kept at 70° to 75° , rising to 80° or 85° from sun heat, and closing early so as to run up to 90° or 100° . Keep the bottom heat steady at 80° to 90° . Sow seed for raising young plants to sustain the succession, and shift seedlings into larger pots, or add soil as the plants advance, stopping those for frames at the second rough leaf, but not for trellises.

In Pits and Frames.—Plants stopped at the second rough leaf before or after planting out will push two or more shoots, those from the seed leaves being rubbed off, and the two shoots in turn being pinched will give four shoots, two to be taken to the front, and two to the back of the frame. Other growths that appear near the collar of the plant should be rubbed off while young, not encouraging any laterals nearer the stem than 6 inches, as it is necessary to keep the neck clear. Stop the principal shoots when within a foot of the sides of the pit or frame, thus throwing vigour into the laterals, and the growths must not be crowded. The laterals will show fruit at the second or third joint, and they should be pinched one joint beyond the fruit, but not until the blossom is fertilised. Little water will be required, nevertheless maintain the soil in a moist state, but avoid a saturated condition. Cover the lights with double mats at night, and see that the linings are regularly attended to, renewing as required. Prepare materials for fresh beds and linings. Three parts Oak or Beech leaves and one part stable litter make the best beds, mixing the materials about a fortnight before it is desired to make the beds. Maintain the bottom heat at 85° to 90° , taking care, however, to prevent overheating.

Vines.—Earliest Forced in Pots.—Top-dress the pots with a compost of equal parts good turfy loam and thoroughly decayed manure, and keep the Vines watered with weak liquid manure, but avoid any approach to soddenness of soil. Keep the laterals below the fruit somewhat closely pinched, but allow those above the fruit more liberty, yet avoid overcrowding. Ventilate early in the day, affording a little air at 70° , increasing it with sun heat to 85° , closing between that and 80° , and if an advance up to 80° all the better. A genial and especially ammoniated atmosphere is of primary importance, as profiting the Vines and retarding red spider. Neat stable or cowhouse drainings diluted with six times the bulk of water answer for sprinkling; also ammoniated Peruvian guano, 1 lb. to 20 gallons of water, dissolved and strained before use, and applying it at the rate of about a gallon to a dozen square yards of surface, such as paths, and not for general damping purposes, which must be attended to two or three times a day with water, using the ammoniated liquor about twice a week, or regularly, for filling the evaporation troughs.

Early Planted-out Vines.—Houses started early in December have the fruit set and need the berries thinning. Remove badly set and ill-shaped clusters, seeking a full crop of good shaped, perfectly finished berries. Allow laterals to extend beyond the fruit where there is space for its exposure to light, yet not encouraging growth to the prejudice of the principal leaves. Attend to stopping frequently, for the alternating accelerations and checks to root action consequent on encouraging the laterals and then removing them by armfuls, are attended by the worst consequences to the foliage and fruit. Afford a thorough supply of liquid nourishment to the inside borders at intervals, maintaining the soil in a due state of moisture, but not supplying it till the border is getting dry. A light mulching of short lumpy manure, such as is prepared for Mushroom beds, tends to encourage surface roots, but avoid fresh horse droppings in quantity. Maintain a night temperature of 60° to 65° , 70° to 75° by day, advancing to 85° or 90° from sun heat, commencing to ventilate from 70° , keeping through the day at 80° to

85° when external conditions are favourable, closing between those temperatures, damping at the time or early in the afternoon. Avoid syringing the foliage and fruit, as however clear the water may appear there is danger of sediment, and almost invariably a deposit is inseparable from the use of the syringe over the Vines after the Grapes are set. Outside borders should be protected against severe frosts and chills from cold rains or melted snow.

Early Muscats.—The Vines started at the middle of December, with acceleration from the new year, are approaching flowering, and need a temperature of 65° to 70° at night, 75° to 80° by day, and 10° to 15° rise from sun heat, closing at between 80° and 85° when bright weather prevails. It is desirable to keep the points of the bunches well up to the light, as Muscats never thrive beneath a dense canopy of foliage. When they commence flowering dust the bunches with a camel's-hair brush, and fertilise every one with the pollen of a free setting variety, such as Black Hamburgh or Alicante. To ripen early in June Muscats must be pushed ahead, giving plenty of heat, and not pinching for air, so as to secure well developed foliage, such as will bear exposure to the early summer sun without scorching. They also require plenty of nourishment, and revel in a border of rather firm gritty material of a sustaining nature, never being satisfactory in very light soils, but these are often made suitable by mulching and application of rather thick liquid manure. Phosphate of lime or dissolved raw bones allowed to lie until mellow, then of these three parts, and two parts nitrate of potash, with one part each of sulphate of magnesia and sulphate of lime, mixed, and applied at the rate of 4 ozs. per square yard, suit Muscats admirably. It is a lack of essential food that causes the white-edged leaf, and is one reason why Muscats are so much more difficult to do than other Grapes.

The Kitchen Garden.

Onions.—The weather has prevented this crop being sown in the open ground, therefore take the first favourable opportunity of doing so. The ground must, however, be quite dry on the surface, and should be levelled with a wooden rake and trodden firmly. Very light soil may be rolled. Pick off large stones and leave the surface smooth and level. Drills should be drawn a foot apart. Stretch the garden line and form the drills alongside it by pressing the back of the rake into the soil not deeper than half an inch. Sow the seed sparingly, but evenly, and draw in the soil to fill the drills again, treading it firmly, and leaving an even surface. Some of the best varieties are Ailsa Craig, Bedfordshire Champion, James' Long Keeping, Rousham Park Hero, Brown Globe, and White Spanish. Where Onion seed has been sown in boxes, the seedlings will now be advancing, and must have plenty of light and air to render them sturdy. Keep on a shelf near the glass, and shortly transfer to a frame, eventually gradually hardening to outdoors, so as to be able to plant out in April. Sow Leeks in a similar manner.

Parsnips.—The Hollow-crowned or Student Parsnips may be sown now. Select ground not recently manured near the surface, as this causes forked roots. The drills should be drawn 12 to 15 inches apart. In sowing the seed either scatter very thinly in a continuous line, or drop two or three seeds together at intervals of 12 inches, eventually thinning the plants to one.

Cabbage.—The best of the plants in seed beds or nursery beds should now be lifted and transplanted permanently. If planted thickly in rows in the autumn remove a number so as to leave the remainder 18 inches or 2 feet apart, planting those taken out at a similar distance on a rich piece of ground. The rows should be 2 feet asunder. The permanent Cabbage quarters, that is, those planted in autumn, must have the soil stirred frequently between the rows of plants in order to accelerate the growth.

Artichokes.—Jerusalem Artichokes may be planted now on rich, deep soil. Should the roots in last season's plantation not yet be lifted it is desirable to do so. Pick out the roots of medium size for planting, and store the larger in sand or ashes for use. Trenched ground suits the Artichoke best. Plant the tubers in rows 2 feet or $2\frac{1}{2}$ feet apart, the sets a foot apart in the drills, which may be 6 inches deep. There are two varieties, the purple and white.

Shallots.—It has not been possible to plant these as early as usual, but they may be inserted now on good ground. Draw drills a foot apart, and plant the bulbs half their depth 9 or 10 inches apart.

Spinach.—Round or summer Spinach ought to be sown in wide drills 2 feet apart, or where room is scarce the sowings may be made between the rows of Peas. It is best to make successional sowings every two or three weeks. Stronger plants and larger leaves are formed if the seed is sown thinly.

Lettuce.—On a warm, rich border in deep soil draw drills 12 inches asunder, and sow the Cabbage and Cos varieties. Tom Thumb is an excellent Cabbage variety, and Bath or Brown Cos and Paris Green good Cos varieties. Thin sowing is desirable, as early thinning of the seedlings is necessary.

Radishes.—Sow the Olive-shaped and long varieties on rich ground. Broadcast sowing is best, but the seed must not be spread thickly, as if crowded even at first the roots are never so good. Sprinkle soil over the seeds after sowing, and afford some protection from birds until the seed has well germinated. A layer of light litter is one of the best protectors.



All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Late Figs (F. J. B.).—The trees should be pruned, though it is a bad practice so late, it being better done in the late summer, or when the crop is cleared. After pruning they should be dressed, using a brush and petrolum or carbolic soap to cleanse them of scale and hibernating red spider, or add a tablespoonful to a quart of water, in which 5 ozs. of soft soap has been dissolved by boiling, adding the petroleum while hot, and stirring in briskly till amalgamated. This when cool enough, say 130° to 135°, may be used on hard wood, and diluted half with hot water, on the rest of the tree, taking care not to damage the young Figs. The old mulching or loose surface soil should be removed, and a little fresh loam and decayed manure supplied, sprinkling on it 4 ozs. per square yard of some approved fertiliser, pointing-in lightly or covering with a little compost. Keep the house as cool as possible, merely excluding frost.

Sample of Material from the Hotbed (Subscriber).—The "insects" of all sizes and colours are "spring tails," and have no connection with red spider, and the white worms are common to all decaying vegetable matter. One part gas liquor to five parts water is quite strong enough to destroy all the insects you mention, and the ammonia vapour arising is even then too powerful for plants for several days; but we presume you intend to allow time for this to be dissipated before using the hotbed, a sweet atmosphere being secured. There is no danger of the insects spreading to Vines. The quantity of Peruvian guano to use in water for damping greenhouses is 1 lb. to 20 gallons of water, stirring well up in a tub, allowing to stand overnight, and either using the clear liquor or straining before use. About 3 gallons of the guano water should be used per square rod (30¼ square yards) of surface, not using oftener than two or three times a week.

Early Celery (D. F. F.).—As you want the Celery for early shows no time should be lost in sowing seed of one of the large white forms, notably Wright's Giant White, and it is also advisable in many instances to raise early plants to blanch for home consumption in September. Sandringham Dwarf White, White Gem, and Veitch's Superb White are among the most reliable of the white varieties, Veitch's Early Rose being also exceptionally good for the earliest crops. Sow the seed somewhat thinly in pans of fine soil, plunge or set on a brisk hotbed in preference to dry warm stages, cover with glass, shade heavily, and keep uniformly moist till the seed has germinated. A shelf in a well-heated house is the best place for the plants till they are large enough to prick out into boxes of good soil, and subsequently they must be kept growing steadily and sturdily, a check from sudden exposure to low temperatures, or from dryness and poverty at the roots, usually having the effect of causing premature bolting.

Cucumber and Tomato Eelworm (A Constant Reader).—1, A 1 per cent. solution of sulphuric acid, 1 fluid ounce to 5 pints of water, is fatal to eelworm reached by it. Soil, however, varies considerably in moisture and in a measure dilutes the solution, so that there is need to exercise judgment. 2, The solution may be, but is not advisedly, used on the ground of the house while plants are growing in pots, as there is some vapour given off by the action of the acid on organic matter, which is more or less injurious to vegetation. 3, A 1 per cent. solution renders the ground sterile, or rather unfitted for broad-leaved plants, such as Cucumbers and Tomatoes, for from six to thirteen weeks, this depending on the nature of the soil, as it contains organic matter or otherwise, is relatively poor. 4, The life history of the eelworm infesting Cucumbers and Tomatoes is fully given, with illustrations, in the *Journal of Horticulture*, October 29th, 1896, page 423. 5, The Cucumber and Tomato are most virulently infested by root-knot eelworm, but most commonly, according to our investigations, the root-stem eelworm, found everywhere on native vegetation. 6, Your question, "How may they be found in ground or affected plants?" admits of but one reply—namely, by examination. Of course, everyone does not know how to use a microscope, and even the things it reveals are not comprehended for lack of knowledge. However, we cannot understand how anyone can have eelworm and, examining the roots microscopically, cannot find it. If not there the roots are not affected, and we may say there is no justification for the assumed deduction from appearances. In the case of soils it may take, however, even days to discover. As for the remedies advanced being quite useless, we must say that they have been found complete in not a few instances.

Stocks for Budding (H. W. C.).—The stocks bought in ought not to be cut down close to the ground, nor cut at all, unless straggling in growth and having correspondingly poor roots, when a little trimming may be practised, especially on the side growths and unwieldy tops, otherwise the stem must be left intact, and the bud inserted therein at the proper time and at the right place—a smooth part of the bark near the ground. Cutting off close to the ground is only necessary when the stocks are old and the bark has become hardened, so as not to be readily raised with the budding knife haft.

Growing Fittonias (Novice).—In 2-inch pots these are useful little plants for various forms of decoration. They root readily at almost any season of the year, and may be inserted in the pots in which they are to be grown, and few dwarf plants are more effective when associated with small Ferns or Selaginellas. The two arranged together as a front margin to the stove are very pleasing, and the close moist atmosphere of the latter suits them admirably. They are more beautiful when grown in low Orchid pans 4 inches across than in ordinary pots. When arranged at the front of a group of plants these low pans can be tilted so that the plants with their finely marked leaves reach to the base.

Pruning Dwarf Fruit Trees (Amateur).—The trees should have as little pruning as possible for profitable production, acting on the following principles:—1, Allow each variety to assume its natural form; 2, confine pruning to thinning out the shoots in late June or early July where they cross, crowd, or otherwise interfere with each other, or impede the free access of light, air, and rain to the fruit and foliage, and in September shorten any shoots that have grown too long to half their length, and those not required for extension to four or six good sized leaves. This is with the object of ripening the wood and developing the fruit buds. The above comprises the summer pruning, and the winter pruning merely consists in shortening shoots not required for extension to three or four buds, and thinning where necessary, so as to leave the primary branches 9' to 12 inches apart; the result is a full crop of fruit by the third year, and the object then must be to prevent overcropping by judicious thinning of the fruit, keeping the trees under rather than overcropped, as some growth is necessary each year—not only for the needful enlargement of the trees, but for keeping them in constant bearing year after year. When the trees attain a good size and are judiciously cropped they will need very little pruning, it being more a question of thinning than shortening the growths.

Brassia verrucosa (J. C. S.).—We are sorry to hear you have been so unsuccessful in Orchid culture, and should be pleased to be of assistance to you, but you have given us no clue as to what conveniences you have for growing them. *Brassia verrucosa* is not as easy to grow as *Cypripedium insigne*, but at the same time its culture presents no special difficulty in a suitable house. A winter minimum of 50° is necessary, and in summer the night temperature should be 10° higher, rising by day to 70° or 80° by sun heat, 65° by fire alone. A moist atmosphere should be kept up, and during the time growth is active the roots must be kept damp. But a good point to remember in watering Orchids is that the roots must be allowed to get really well on the dry side before another supply of water is afforded, and then sufficient must be given to thoroughly soak the compost. A day's drying never hurts any epiphytal Orchid, but a constantly wet state is very wrong. The compost for *B. verrucosa* should consist of good lumpy peat and sphagnum, with plenty of rough crocks added. Should your plant be in bad condition at the roots you should repot it, but avoid disturbing it if you can, as the roots are easily injured by rough treatment. Lightly sprinkling the plants with tepid water is very helpful to them in warm dry summer weather, but in autumn, winter, and early spring this must not be practised. Like all other Orchids *Brassia verrucosa* must be kept clean; insects will soon ruin the strongest plants if allowed to remain. We trust this information will help you, but if there is any point on which you need further advice, write again, giving full particulars as to your house and treatment.

Names of Plants.—We only undertake to name *species* of cultivated plants, not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. Thin paper boxes arrive in a flattened state. Slightly damp moss, soft green grass, or leaves form the best packing, dry wool or paper the worst. Those arrive in the best condition that are so closely or firmly packed in soft green fresh grass, as to remain unmoved by shaking. No specimens should be sent to rest in the post office over Sunday, on which day there is no delivery of postal matter in London. Specimens in partially filled boxes are invariably injured or spoiled by being dashed to and fro in transit. Not more than six specimens can be named at once, and the numbers should be visible without untying the ligatures, it being often difficult to separate them when the paper is damp. (P. B. D.).—1, *Onychium japonicum*; 2, *Nephrolepis exaltata*; 3, *Polystichum aculeatum*; 4, *Pteris cretica albo-lineata*; 5, *Davallia canariensis*; 6, *Selaginella Wildenovi*. (G. H. F.).—1, *Curculigo recurvata*; 2, *Sparmannia africana*; 3, *Chimonanthus fragrans*; 4, *Linum flavum*; 5, *Cœlogyne cristata*. (J. W. W.).—1, *Deutzia gracilis*; 2, *Begonia metallica*; 3, *B. Carrieri*. (C. C. R.).—1, *Cypripedium insigne*; 2, *Cattleya Trianae*; 3, *Sparmannia africana*.

Covent Garden Market.—February 27th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, cooking, bush. ...	2	6 to 7	Lemons, case ...	9	0 to 16
„ Californian, case ...	7	6 9 6	Oranges, case ...	6	0 15 0
Apricots, Cape, box ...	8	0 10 0	Pears, crate ...	3	0 7 0
Chestnuts, bag, from ...	5	0 15 0	„ stewing, case of		
Cobnuts, doz. lb., best ...	4	0 5 0	72 to 120 ...	4	6 6 6
Grapes, black ...	0	6 2 6	„ Californian, case	15	0 18 0
„ Dutch, lb. ...	0	6 1 0	„ ½ case ...	9	0 10 0
„ white, per lb. ...	1	6 5 0	Pines, St. Michael's, each	1	6 4 6

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	6 to 3 6	Greens, bush. ...	0	6 to 1 0
„ Jerusalem, sieve ...	1	6 0 0	Herbs, bunch ...	0	2 0 0
Asparagus (Sprue Grass) ...	0	6 0 8	Leeks, bunch ...	0	1 3 0 0
„ English, 100 ...	7	0 0 0	Lettuce, doz. French ...	0	8 1 0
„ Giant, bundle ...	15	0 20 0	Mushrooms, forced, lb. ...	0	8 0 9
„ Spanish, bundle ...	1	6 1 9	Mustard and Cress, pmt. ...	0	2 0 0
„ Paris Green ...	5	0 6 0	Onions, Dutch, bag ...	3	6 0 0
Batavia, doz. ...	1	3 1 6	„ English, cwt. ...	5	0 0 0
Beans, French, per lb. ...	0	10 0 0	Parsley, doz. bnchs. ...	2	0 3 0
„ Jersey, per lb. ...	1	6 2 0	Potatoes, cwt. ...	3	0 7 0
Beet, red, doz. ...	0	6 0 0	Radishes, doz. ...	1	0 1 3
Broccoli, bush. ...	0	6 1 0	Rhubarb, doz. ...	1	2 1 5
Brussels Sprouts, sieve ...	1	0 2 0	Savoy, tally ...	4	0 5 0
Cabbages, tally ...	3	0 5 0	Scotch Kale, per bushel ...	0	6 1 3
Carrots, doz. bnch. ...	2	0 3 0	Seakale, best, doz. ...	12	0 0 0
Cauliflowers, doz. ...	1	6 3 0	„ 2nd, doz. ...	6	0 8 0
Celery, bundle ...	1	0 1 9	Shallots, lb. ...	0	2 0 3
Chicory, Belgian, lb. ...	0	4 0 0	Spinach, bush. ...	2	6 3 6
Corn Salad, strike ...	1	0 1 3	Turnips, doz. ...	2	0 3 0
Cucumbers, doz. ...	12	0 18 0	Turnip tops ...	0	9 1 0
Endive, doz. ...	1	6 0 0	Watercress, doz. ...	0	8 0 10

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Asparagus, Fern, bunch ...	1	6 to 2 6	Maidenhair Fern, dozen		
Carnations, 12 blooms ...	2	0 3 0	bunches ...	4	0 to 8 0
Cattleyas, doz. ...	10	0 18 0	Mimosas, bnch. ...	1	0 1 6
Daffodils, doz. ...	6	0 9 0	Odontoglossums ...	4	0 8 0
Eucharis, doz. ...	4	0 6 0	Roses Tea, white, doz. ...	1	0 3 0
Gardenias, doz. ...	3	0 5 0	„ yellow, doz. (Perles)	2	0 4 0
Geranium, scarlet, doz.			„ red, doz. ...	6	0 10 0
bunches ...	8	0 12 0	„ Catherine Mermet,		
Hyacinths, doz. ...	4	0 8 0	doz. ...	6	0 12 0
Lilium lancifolium album	3	0 5 0	Smilax, bunch ...	3	0 5 0
„ „ rubrum	3	0 5 0	Tulips, yellow, doz. bnchs.	6	0 9 0
„ various ...	4	0 8 0	„ white ...	8	0 10 0
Lilac, white, bunch, ...	3	0 5 0	„ red ...	6	0 8 0
Lily of the Valley, 12 bun.	8	0 12 0			

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acers, doz. ...	12	0 to 24 0	Foliage plants, var., each	1	0 to 5 0
Arbor Vitæ, var., doz. ...	6	0 36 0	Geraniums, scarlet, doz.	6	0 10 0
Aspidistra, doz. ...	18	0 36 0	„ pink, doz. ...	8	0 10 0
Aspidistra, specimen ...	15	0 20 0	Hydrangeas, white, each	2	6 5 0
Azaleas, various, each ...	2	6 5 0	„ pink, doz. ...	12	0 15 6
Boronias, doz. ...	20	0 24 0	„ paniculata, each	1	0 3 0
Cannas, doz. ...	18	0 0 0	Lilium Harrisii, doz. ...	8	0 18 0
Crotons, doz. ...	18	0 30 0	Lycopodiums, doz. ...	3	0 6 0
Dracæna, var., doz. ...	12	0 30 0	Marguerite Daisy, doz. ...	8	0 10 0
Dracæna, viridis, doz. ...	9	0 18 0	Mignonette, doz. ...	8	0 12 0
Erica, various, doz. ...	8	0 18 0	Myrtles, doz. ...	6	0 9 0
Euonymus, var., doz. ...	6	0 18 0	Palms, in var., each ...	1	0 15 0
Evergreens, var., doz. ...	4	0 18 0	„ specimens ...	21	0 63 0
Ferns, var., doz. ...	4	0 18 0	Roses, doz. ...	6	0 18 0
„ small, 100 ...	4	0 8 0	Stocks, doz. ...	8	0 12 0
Ficus elastica, each ...	1	6 7 6			



More About Fertilisers.

IN dealing with this subject lately we referred more particularly to the various forms of phosphate, and as this manure is practically the only one which is of use in growing Turnips, we may in a few words dismiss the root crop from our present article. We have before us the results of the very valuable experiments of the Wilts County

Council, and note that in the growth of Swedes with superphosphate the addition of 1 cwt. per acre of nitrate of soda produced only 12 cwt. more roots than super alone, and did not pay; 2 cwt. nitrate produced an increase of 32 cwt., just paying for itself; whilst 3 cwt. produced a very small increase indeed, and was quite a failure. This was on light sandy land at Lickhill, and is quite corroborative of our own experience, that there are only two things worth applying to light soils for Swedes—viz., phosphate (in the form of bonemeal or super, or both), and spit muck.

In speaking of roots we only referred to Turnips, and did not include Mangolds, which most decidedly benefit from liberal supplies of nitrogen. At Quemerford, in Wiltshire, on strong soil, and therefore favourable to the Mangold crop, the following mixture was used for it, the Mangold being grown after Oats manured with 2 cwt. of nitrate of soda and 3 cwt. of superphosphate. The Mangold manure: nitrate of soda 4½ cwt., superphosphate 1 cwt., salt 3 cwt. per acre. On the average of four years the unmanured plot produced 19 tons per acre, and the manured 34 tons, showing a gain of 15 tons of Mangold, worth at least £7 10s., produced at a cost of £2 6s., and showing a nett profit of £5 4s.

The nitrate was applied in several dressings, no more than 1½ cwt. at one time. We take it as proved that for Mangold on heavy land farmyard muck may be dispensed with, and in fact if the seedtime be a dry one the use of any considerable quantity of muck may be attended by considerable risk of failure in obtaining a good plant. Favourable as the Quemerford results are, however, we should like to suggest that the second top-dressing should take the form of an equivalent quantity of sulphate of ammonia in place of the nitrate, and even the third dressing might profitably take the form of sulphate. We have used both forms of nitrogen, and found them equal as regards produce, but we thought the sulphate produced bulbs of better quality.

Artificially used to aid the growth of grain crops are not so much favoured by agriculturists as they should be. When we consider the whole cost of a crop—rent, labour, and seed—an additional outlay of £1 or £1 5s. per acre does not seem an excessive outlay when it practically assures a full profitable crop. Of course there is land which is naturally so fertile that if it is kept in a good state of cultivation it will produce a full crop without artificial assistance. By a full crop we mean as much as the land can carry and bring to maturity. Overdone, unhealthy crops are not generally profitable. But we may see at Quemerford an illustration of profitable top-dressing. The Barley crop after Mangold was dressed with 1½ cwt. nitrate of soda and 4 cwt. basic slag per acre, the latter being applied during the winter. The cost per acre was £1 4s. 3d., and the gain over an unmanured plot was 750 lbs. of grain and 14 cwt. of straw, together valued at £3 12s. 4d., and showing a profit per acre on the manure of £2 8s. 1d. This was very satisfactory. The Lickhill Barley experiment was not so, however, but we attribute this less pleasing result to the fact that the Barley was grown after a Potato crop, which experience teaches us is a bad preparation for Barley, especially on light soils.

During a thirty years experience on light land we have thrice allowed Barley to follow Potatoes. The third trial was convincing, and proved that dressings of nitrogen did positive harm. At Lickhill the Barley was dressed with 3 cwt. superphosphate, and with nitrogen in varying quantities. One plot had 1½ cwt. nitrate per acre, one 1 cwt., a third half cwt. The results showed a profit over the unmanured plot of 13s. per acre on plot 1, 16s. 4d. per acre on plot 2, and 2s. 2d. per acre upon plot 3. The quality of the grain must have been very moderate, as it weighed only 51 lbs. per bushel on the manured plots, and 51½ lbs. on the unmanured, and it must have been very similar to that we grew after Potatoes—viz., little better than hen corn. N.B.—Wheat should follow Potatoes.

The Quemerford experiments with Oats had very mixed results, for whereas a dressing of 2 cwt. nitrate of soda and 4 cwt. of basic slag produced 13 bushels per acre more than an unmanured plot, the latter produced 7 bushels more than a plot manured with 4 tons per acre of farmyard manure. The latter can hardly have done harm if it did no good, but Mr. Corbet, the secretary, explains that the Clover crop which preceded the Oats was experimented upon with a compound Clover manure, that where none of this was used the crop was almost entirely one of Clover, which would leave a valuable residue, whereas where the manure was used the grasses (or in his language gramineous herbage) were greatly encouraged, the crop contained very little Clover, and the residue was of proportionately less value. This Clover manure must have contained considerable nitrogen to act as it did. A mixture of potash and phosphates would seem to have been more suitable to encourage Clover. However, this difference, or rather patchiness in the Clover crop, spoiled the Oat experiment, and we can only gather one essential fact, that the applications of nitrogen and lime in artificial form were decidedly profitable.

Manures for Potatoes are probably the most important items in connection with their cultivation. No crop pays better for high

cultivation, and in fact they cannot be grown profitably without it. At Quemerford very exhaustive trials are carried out on the continuous growth of Potatoes on the same land with varied mixtures consisting of dung, nitrate of soda, kainit, and superphosphate. The results are too much to give here in full, but we will summarise one or two points. Of the artificials, nitrate was the most effective, and superphosphate the least. Eight tons of dung, aided by a mixture of artificials, was much more profitable than 16 tons of dung used alone. Eight tons of dung, aided by kainit alone, was more profitable than 16 of dung used alone by £3 16s. 7d. per acre. The most profitable mixture was 8 tons of dung, 2½ cwt. nitrate of soda, and 2½ cwt. of kainit; profit £8 10s. 10d. over the unmanured. Sixteen tons of dung was more remunerative than 8 tons by £1 3s. 10d., after charging for cost of manure.

The above results strongly corroborate the teaching of previous trials, and show how desirable is the enlightened use of manures. We should, however, have preferred to see sulphate of ammonia used instead of nitrate, as we believe it to be a better form of nitrogen for Potatoes. Mixtures such as the above would suit any land, but for sand we should increase the nitrogen, and for warp substitute sulphate of iron for 1 cwt. of kainit.

Work on the Home Farm.

Since writing last week we have had quite a cold snap, 14° of frost having been registered. We had 2 or 3 inches of snow, which are now almost gone, but there is still a touch of frost in the air, and we fear the cold weather is not going yet. We have again to chronicle no advance in farm work. Here and there farmers are trying to plough where the land is light enough to allow of decent work being done, but generally speaking work is still waiting for the weather. Advantage has been taken of enforced stoppage on the land to let the steam thrasher have a good turn. Threshing has been very general lately, and laden waggons are numerous on the roads.

Markets are still very uninspiring, and it will not be easy to persuade farmers to give high prices for fancy seed grain for spring sowing. Success of new kinds is quite as often owing to the value of a change of soil and climate as to the superior qualities of the variety. A shilling or two per acre is often quite sufficient to pay for a suitable change of seed, and it is laziness on the farmer's part if he does not get one.

Notwithstanding bad lair sheep are doing well, and Turnips—i.e., Swedes, are no worse for the frost, but really better, for it has checked them from running, which they were inclined to do. Mutton is now worth 9d. per lb. in the wool, which, with wool at 7½d. per lb., is a tempting price. We know one farmer who is selling half his fat hoggetts, and says he will roll his roots down if he cannot eat them. What a change since last February!

We have noticed a discussion in a contemporary on the weight of a heavy crop of Swedes, and as to 40 tons being a very abnormal weight per acre. Many farmer correspondents are hard of belief in such weights, and we confess to sharing their want of faith. We have just weighed 1 ton from 240 square yards, which comes to 20 tons per acre, and we have not seen many crops as good.

Wheat has been at a standstill for some time, but looks fairly well for the time of year; if there is to be any wireworm trouble the pest will soon be showing itself, and we must be on the look out to take palliative measures without unnecessary delay. Wheat at present rates will hardly pay for rape dust, so we must trust to free rolling of ground when it is dry enough. There seems little likelihood of that as we write, but with March so near at hand conditions might very rapidly change. Potatoes still pass off slowly, despite the cold weather, and prices are firm and no more.

Sugar Beet and Mangold Wurtzel.

THE experiments by the Earl of Denbigh in the growth of Sugar Beet on the home farm at Newnham Paddox, Warwickshire, were on a larger scale in 1900 than in the previous year, and five different sorts were tried, and to show more distinctly the benefit, if any, to be derived from the cultivation of this root, his lordship decided that it should be grown under exactly the same conditions and cultivation as a crop of Mangold Wurtzel. The field on which the roots were grown contains 5½ acres, and 1½ acre in the centre of the field was sown with Sugar Beet and the 2 acres on either side with Mangolds. The Sugar Beets selected for trial were the Aderstedt, Breustedt, Mette Vilmorin, Vilmorin Elite, and Klein Wanzleben, and for the Mangolds, Sutton's Prizewinner Yellow Globe and Sutton's Golden Tankard.

The land is a fairly strong loam on a clay subsoil, and for some years has been cultivated to a depth of from 8 to 10 inches; but at

no time heavily manured, and may be fairly considered in an average state of fertility, neither rich nor poor, and the rental value of the land may be put at 25s. an acre. The crop of Wheat in 1899, after a Clover ley, was only a moderate one. As soon as the Wheat was harvested, the land was ploughed about 8 inches deep, and later on in the autumn was ridged, and left in this state for the winter. Early in the spring about ten loads of farmyard manure to the acre were spread on the ridges, and these were then split back, but the land was so rough that it was found necessary to again break up the ridges and work the land, and just before again ridging for the roots 5 cwt. of dissolved bones to the acre were spread over the land.

The ridges for the Mangolds were 27 inches apart, and those for the Sugar Beet 15 inches, and all the seeds were sown in the first week of May, the Sugar Beet at the rate of 20 lbs. and the Mangolds at 6 lbs. to the acre, and all the seeds proved to be of very high germinating qualities, and there was not the least sign of any blank. As soon as the drills could be fairly seen the land was hand-hoed on each side of the drills, and this was almost immediately followed by bunching out the plants, the Sugar Beet to 4 inches and the Mangolds to 10 inches; the hand hoe was again used to hoe round the bunches, but previous to this 1 cwt. of nitrate of soda was spread along the drills, and the land was also well horse-hoed. The plants were then carefully thinned by hand, and the Sugar Beet left at 6 inches and the Mangolds at 12 inches apart in the drills. The crops were subsequently hand and horse-hoed several times, and the ground was at all times kept in a loose and open state, and about the middle of June a second dressing of 1 cwt. of nitrate of soda was spread along the drills.

The roots were taken up early in November, and for each sort of root grown three plots 11 yards square were cleaned and weighed, and great care was taken that these plots should be a fair average of the different crops, and the result for each lot of roots was as follows:—

SUGAR BEET.

Aderstedt	...	...	...	25 tons	7 cwt.	86 lbs.	to the acre.
Breustedt	...	...	...	24 "	1 "	13 "	" "
Mette Vilmorin	...	...	...	28 "	5 "	43 "	" "
Vilmorin Elite	...	...	...	25 "	0 "	63 "	" "
Klein Wanzleben	...	...	...	25 "	2 "	81 "	" "
The average of	...	...	...	25 "	11 "	61 "	" "

MANGOLD WURTZEL.

Sutton's Prizewinner Yellow Globe	41 "	7 "	42 "	" "
Sutton's Golden Tankard	34 "	16 "	21 "	" "

The average weight of each root of the Sugar Beet was as follows:—Aderstedt, 1.336; Breustedt, 1.249; Mette Vilmorin, 1.096; Vilmorin Elite, 1.225; Klein Wanzleben, 1.385 lbs. The average weight of each root of the Mangold Wurtzel was as follows:—Sutton's Prizewinner Yellow Globe, 4.987; Sutton's Golden Tankard, 4.293 lbs.

The estimated cost of ploughings, cultivations, farmyard manure (hauling only), dissolved bones, nitrate of soda, hoeing, lifting, and seed for the Sugar Beet is £9 2s. 6d., and for the Mangolds £8 2s. 6d. an acre. The extra cost for the Sugar Beet is for the most part, on account of the roots being so much thicker on the ground, and the greater difficulty in lifting and cleaning them.

To test the value of Sugar Beet as food for feeding cattle and for dairy cows, experiments are being carried out, and the results will be given at some future time.

The experiments at Newnham in 1900 compare favourably with those of 1899. The weight of roots per acre in 1899, when only one sort was tried, was 25 tons 12 cwt. 3 qrs. 12 lbs., as compared with the average weight of the roots grown in 1900 of 25 tons 11 cwt. 61 lbs.; but the quantity of sugar, 15.90 in 100 parts of the juice in 1899, has been increased to an average of 18.03 in 1900, and the quotient of purity from 85.48 to 88.13. It must also be noted that whereas in 1899 the roots were grown on specially prepared ground, with heavy dressings of manure, the roots of 1900 have only had the ordinary cultivation and manuring for the usual root crops. It was expressly desired by Lord Denbigh to show this year whether Sugar Beet could be grown with advantage under the same management as should be given to Mangolds or any other root crop.

There were other experiments made at Newnham in the growth of Sugar Beet in 1900, but as these were carried out under somewhat exceptional circumstances the results are not given, but it may be mentioned that in one case the roots grown exceeded 33 tons to the acre, with an average weight of 2.016 for each cleaned root, and that the average from eight different plots was nearly 27 tons to the acre. In the heavy crop of over 33 tons to the acre the analysis showed the quantity of sugar in 100 parts of the juice to be 17.20, and the quotient of purity 87.30, so that it is clear that the quantity of Sugar Beet can be much increased without lowering the value of the roots for the manufacture of sugar.—HENRY H. CAVE, *Estate Office, Rugby.*

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Journal of Horticulture.

THURSDAY, MARCH 7, 1901.

The Worship of Size.

WHATEVER may be attributed to the American for his boast of big things, and allowing that he has certain scope for it, we live in a glass house, and must plead guilty to having a lingering regard for great things also. Perhaps America inherited this characteristic from the mother country, but be that as it may, it is a British peculiarity. We are apt to measure our wealth, resources, manufactures, and national strength by their magnitude, and anything of large proportions has a fascination for us. We seem to grow to it somehow, and any undertaking that holds out possibilities for the development of its proportions never lingers long for the want of support.

Apply the characteristic to gardening matters, and you will find that it is a pervading spirit, governing more or less the operations of horticulturists. Many a crusade has been preached against it, scores of articles penned for the purpose of pointing out its weaknesses, but worshippers still flock to the shrine of magnitude, and size is one of the main objects in cultivation, whatever may be the qualities sacrificed to obtain it. However we may attempt to wriggle out of the argument, the fact remains that the fruit, flower, or vegetable that has the capacity for increase of size at the hands of the grower has a fascination of its own, and enjoys a popularity that it would not otherwise possess.

Let me particularise a little, and take the all-important Chrysanthemum as a case in point. There is no need to dwell on its popularity, or say a word about the hold it has on public taste. All that is proved by the shows, societies, and institutions founded on its behalf, to say nothing of the keen interest taken in its culture by varying grades of society. But wherein lies the chief fascination of the autumn queen? Admitting that it is a beautiful flower, reigning at a dull



During FIFTY-TWO YEARS the "JOURNAL OF HORTICULTURE" has been written by Gardeners for Gardeners, and in its principles, its practice, and its price it still remains the same. One alteration is perhaps, however, necessary. Our modern methods of production have rendered the price old-fashioned, and hence in order to meet the wishes of the present generation of Gardeners the "JOURNAL OF HORTICULTURE" will hereafter be sold for TWOPENCE instead of Threepence.

season, readily grown, and wonderful in its variety. I do not think the secret is primarily contained in any of these qualities. Is it not rather in the possibilities of the flower? And the growth of its remarkable popularity can be traced to the time when its adaptability for the increase of its proportions was revealed. What is the chief aim of Chrysanthemum growers of all classes? Size. Say what you like about colour, form, and character, they all have their parts to play, but the flower that has all these to commend it will never hit public taste and enjoy wide popularity unless it is amenable to size. There are some who predict the decline of the Chrysanthemum, and their pessimistic gaze fancies that it can reveal the signs looming into shape; but I do not think the flower will lose its hold until its possibilities are exhausted.

Apart from the question of usefulness, perhaps the Onion is the most fascinating vegetable in the kitchen garden, and why? Because of its possibilities of course. I cannot name the exact date when the new era opened, but of late years the Onion has enjoyed a popularity of its own. Hitherto it was an ordinary vegetable commodity with its capacities undeveloped. But it was found that by following a certain method of treatment, which consists of high cultivation and lengthening the season of the plant's growth, that the size and weight of the bulb could be largely increased, and since then the culture of the Onion has risen to a fine art. It is a source of open gratification to a grower to obtain bulbs a pound weight, but it does not satisfy him. Visions of two round Onions rise before him, and even when they become realities he is not content. Size lures him on, and the plant responds readily to his efforts. Records are to be made only to be broken, and the three-pounder, which creates a sensation this year, sinks to obscurity next, when the weight is topped by a few more ounces. And the future is a great unknown for Onion growers. We may foolishly predict what the bulb may yet be grown to, and get laughed at for our pains. But who can tell, with the evidence of the past before us? With the loadstone of size to attract them, the men will be forthcoming to develop the possibilities of the Onion to its utmost. And amidst it all, the cry is re-echoed from the kitchen that size is not the sum and substance of a good Onion. The eight-ounce specimens of the old days were as good as the monsters of the present time, says the cook, and more economical to use, but what matters that to the gardener? The fascinations of size are too much for him, and in obtaining it constant work and endless trouble are only details.

The man who writes essays on Grape culture emphasises the prime importance of colour and finish, but in his own quiet moments in the vinery he will linger fondly near the bunch that bids fair to be the heaviest he has ever grown, and overlook little perfections that a disinterested party would not be slow to observe. If it is not in bunch, then the size worship is directed to berry, and in commercial Grape culture we know that certain varieties accommodating in this respect are more profitable than some of infinitely better quality. And at the fruit show you see the public linger round the massive bunches and confine their praises to those with giant berries. You may not value their opinions, because they are not experts, but it shows the national tendency, and the attractiveness of great things.

It is very easy to write about the shortcomings of Peasgood's Nonesuch and other of our largest Apples, and to compare their flavour with that of less attractive varieties, but their popularity remains. Only recently a paragraph has been going the rounds of the papers, telling of some enormous Apples that have been grown in America. Nothing was said about the quality. It was all size. I do not mean to say that a large Apple is necessarily of inferior quality to a small one, but I only draw attention to the fruits of such varieties as the one mentioned, which always come in for a great share of attention at the shows, and the man in the street rarely fails to direct a second glance at the fruiterer's window when there is something big and attractive there. You may talk about Pitmaston Duchess being only a second-rate quality Pear without fear of contradiction, but from a commercial point of view it has few superiors, and size is its recommendation. In fairness it must be said that the buyer of fruit is not the only person attracted by size. The grower has a touch of the complaint in most cases, and the variety of Apple, Pear, or any other fruit that has the capacity for breaking records on the scales has a peculiar fascination of its own.

In opening this question at all I feel that I am treading on dangerous ground, and shall not be surprised if attempts are made to prove that I am altogether wrong in my views. It is so comfortable to persuade ourselves that the main object is to get the best, and to shut out the fact that in reality it is the biggest we want. I do not agree with those who contend that the latter object is entirely wrong, because in certain cases size and quality may be found in happy combination. It is when the latter is sacrificed for the sake of the former that we are on the wrong track. Some surmises have been made as to what flowers are to become crazes in the future. I do not pretend to know, but judging from what one can see the chances are in favour of those things that hold out possibilities for size.—G. H. H.

Some Grapes That are Fickle.

UNDER this heading may be enumerated those Grapes well known to private as well as market growers, which, while possessed of fickleness, are nevertheless more or less popular. Who will be prepared to say that the black Madresfield Court is not popular with almost everyone? Growers and consumers are alike unanimous in its praise; yet, while this is true, what a comparatively small percentage among so many growers can claim complete success in their treatment of it? Circumstances vary so much, as do the summer seasons, that it does not come to the lot of everyone to produce first-class well-finished Madresfields. Those who are able to completely master the traits of uncertainty to which it is heir obtain a due compliment and envy.

Many persons may grow them well up to a certain point, or rather to one of two points. In one case the bunches may be well set and perfectly shaped, the berries swell up to or above the average in size, when suddenly there may be a change of weather, rain succeeding sunshine, and the grower's expectations are shattered. Keeping the borders dry is an oft-repeated remedy, also the atmosphere maintained in a buoyant state by the judicious use of ventilation and fire heat. The latter is by no means an easy matter when the roof divides the rainfall between the eaves gutter and the interior of the house; nor is it easily avoided when the roots are in an outside border, and subject to the fluctuations of soil moisture.

While splitting of the berries becomes the uncertainty of one case, perfect finish is equally as much so in another, and the more luxuriant the Vine and large the size of the berries may be, the more difficult is it to "put on" the perfect finish. There is a greenness or redness about the stalk that is not easily changed into a sleek black. Madresfield therefore, though one of the best summer and autumn Grapes, is almost universally adjudged a fickle one.

The Muscat Hamburg is none the less so, although I know there are cases where no more trouble is given with this than with Black Hamburg itself. The trouble is not so much the colour as the perfect fertilisation of the bunches, although both are sometimes at fault. By some cultivators Buckland Sweetwater can be grown in the most magnificent form—colour, size of berries and weight of bunches leaving nothing to be desired. With another just the opposite extreme obtains—poor crop, small bunches, and indifferent colour. Gros Guillaume if not carefully pruned will be rendered fruitless, and is usually better inarched or grafted on another, Black Hamburg being as good as any. Gros Maroc is also known to be fickle, so much so that it has often been discarded, and many of those who plant secure what they consider a good stock. This frequently does better worked on the Hamburg as a foster parent.

Gros Colman, which for market purposes is such an universal favourite, is not devoid of fickleness, but this comes not so much from inherent disability, perhaps, as from soil deficiency. There are soils in which it is just such a signal failure as it is a success in others, and unless a suitable loamy medium can be provided, nothing one may mix with it can supply the soil's deficiency. In one vinery several varieties may sometimes be found growing together with equal success, in another Gros Colman will prove a "black sheep," which clearly shows that while there are many classes of soil that provide the necessary constituents, there are a few that do not, for this one particular Grape. Much better results have been obtained by simply trenching and manuring the native soil in some gardens than by incurring the expense of turf-made borders.

Lady Downe's possesses one weakness, and perhaps only one—that is found in the scalding of the berries in early summer. Various causes are assigned for this, but the attendant remedies are not uniformly successful. Alnwick Seedling many know to their cost to be a fickle Grape, and if not properly fertilised at flowering time there will be plenty of berries of Currant size later on. Mrs. Pearson and Golden Queen are not without their faults, nor is that fine Scotch raised Grape Duke of Buccleuch. Golden Champion is rarely cultivated nowadays by reason of its uncertainty, nor is Trentham Black, both good Grapes when well grown. Thus it happens that Grapes which possess no faults have a small majority among the many grown. Alicante is one that culturally speaking few can find fault with, and the same may be said of Foster's Seedling, Black Hamburg, and Appley Towers. The characters of Lady Hutt and the newer Diamond Jubilee remain to be proved.

In few gardens can Mrs. Pince's Muscat be successfully produced, the absence of full colour, perhaps, providing the greater fault. Black Morocco, like Alnwick Seedling, sets indifferently unaided, and as a consequence is seldom planted. Given suitable surroundings and intelligent treatment, no fault can be found with Muscat of Alexandria, but how few find no fickleness in Canon Hall Muscat?—W. S.



Phaios-Calanthe Schroederiana.

IN the above we have a remarkable bi-generic hybrid, with pale lilac petals and sepals, and finely developed claret-coloured lip. The hybrid was staged by Messrs. James Veitch & Sons, Ltd., Chelsea, at the last Drill Hall meeting, with whom it resulted as a cross between Phaius Wallichii (female) and Calanthe \times Baron Schröder (male). These generic hybrids are exceedingly interesting, and serve to prove how closely united the genera are.

Oncidium spillopteron.

THIS species produces handsome paniculate spikes of bright yellow blossoms, each with a crimson crest that gives it a very distinct and telling appearance in a group of Orchids. The plant is of medium growth only, and like others of a similar habit, should not be very liberally treated in the matter of size of pot and amount of compost; yet when the plants are thriving and healthy a moderate amount of feeding is better than a very bare diet, but it is most important that nothing at all likely to clog the drainage or fine down the other parts of the compost is introduced therewith. It is a native of Minas Gesnes in Brazil, and very nearly related to *O. Batemanianum*.

Recent importations have made it more plentiful than formerly in collections, and it is not at all unusual to see nice plants of it in our trade groups at the shows. Anything like this a little out of the ordinary run of *Oncidiums* is bound to attract attention, and being of easy culture amateurs may take it up with every prospect of succeeding. The most likely place for it is one close to the light in a cool intermediate house, or at the cool end of that devoted to *Cattleyas*. In more heat the growth will be weak and flowerless, while in a very cool house it will not be sufficiently free.

Masdevallia Peristeria.

The front of the flower of this pretty species is almost an exact imitation of the lip of the Dove Orchid, *Peristeria elata*. But the colour is quite different, this varying in the different forms from yellowish to reddish brown, but never white as in the above well-known plant. *M. Peristeria* should be grown in a very cool, moist, and shady house; it will not thrive in a dry or hot one. The pots or baskets (either are suitable) used for it should be only sufficiently large to take the plant easily, and allow for about an inch of margin.

The roots cannot push through a heavy, close mass of peat and moss, or other compressible material, and if this is given the plants are never really happy in it. But let them have a little, and keep this open and well drained. Then the roots push through it and take hold of the receptacle in which it is grown, and as every Orchid must have a firm hold on the home of its adoption to be healthy, this will tend materially to the end in view. Like all *Masdevallias*, this one is very apt to be overrun with thrips, both black and yellow. White scale is also a troublesome pest if not cleared off early, and these should have attention directly the least sign of them is noticed. *M. Peristeria* was introduced from Antioquia in 1873 by Messrs. Veitch.

Lælia anceps alba.

In using the varietal name *alba* I am not thinking so much of this particular variety as of the white forms generally. All these are very beautiful Orchids, as was shown at a recent Drill Hall meeting, when some scores of spikes were present from various exhibitors. I am

under the impression that the white varieties as a whole are far more successfully cultivated now than a few years ago, and this is without doubt due in considerable measure to the increased amount of light allowed them.

Much as the type plant delights in this it is even more necessary for the white varieties, which will not flower satisfactorily in an overheated, shady, or very moist house. Yet they delight in moisture, and as long as there are ample air currents and a free light no harm will be done by damping floors and stages often. The thing to avoid is a stagnant and close damp atmosphere. What is true of the atmosphere is also true of the roots. These like plenty of moisture, but the compost must be so arranged that the water passes quickly away when poured upon it. The present is a suitable time for potting, and this point must be kept in mind. Peat and moss in equal proportions will suit it well, and a thin layer only over good drainage is essential.

Vandas.

I was pleased to see "S. F." on page 109, calling attention to the merits of this grand genus of Orchids, which has been much neglected of recent years. But I hope "S. F." will pardon me for calling his attention to the fact that all *Vandas* do not, as his note implies, come from the hottest parts of India. Take that lovely one which he extols as the finest of all *Vandas*, *V. cœrulea*. This we are told by collectors is often found covered with hoar frost in early morning, and has been found under cultivation to be most satisfactory in a cool house.

V. teres and *V. Hookeriana*, on the other hand, can hardly have too much heat during their growing season. The genus, as a matter of fact, cannot be treated of in a collective manner. No one with any experience with Orchids would think of giving the large growing species, such as *V. Batemani* and *V. gigantea*, the same class of material or size of pot that they would give to *V. Kimballiana*, or even the species mentioned above, which seems always to delight in having its roots tightly twisted into a ball, and overflowing the pot or basket into the congenial moisture of the

Orchid house. I can quite bear out all that "S. F." says in favour of these lovely Orchids, and it is a great pity they are not more generally grown.—H. R. R.

Diospyros Kaki.

AWAY back in 1876 a writer in the *Journal of Horticulture* said that "as the generic name affirms, this is a fruit fit for the gods; which is more than the usual exaggeration, for although its bright yellow colour is showy, it is not so good in flavour as a moderate Plum." No, indeed! for it is a very sour "Plum" unless it is eaten at the stage known as "dead ripe." It is probably this fact which deters the advance in popularity of *D. Kaki*, the Chinese Date Plum, better known as the North American Persimmon. The fruit, however, are said to be esteemed in Japan, the native country of the tree, where it bears prolifically. Plants have had a trial in orchard houses in this country, as, for instance, in Mr. G. F. Wilson's garden at Weybridge, Surrey, where they thrive. Whether they still continue to bear and grow well we do not know. Mr. Wilson, in common with others, complains of its tart astringency. When preserved in syrup, or even candied, the fruit are very tasty, and might be imported for our markets. Our illustration (page 191) splendidly depicts the rounded shape and Apple-like appearance of this fruit. Canon Ellacombe succeeds in fruiting the plant against a wall in his garden at Bitton. The above may be of interest to "A. C.," Dehra Dun, India, who wrote concerning the Persimmon two weeks ago.

Certificated Plants.—No. 7.

THE very fine hybrid Clematises so largely cultivated in the present day we owe to the latter half of the nineteenth century. One of the earliest hybrids obtained was *C. Hendersoni*, raised at the Pine Apple Nurseries in the Edgware Road, but the parentage is not known with certainty. One or two seedling varieties were raised on the Continent, but it was not until Mr. Isaac Anderson-Henry of Edinburgh commenced, in 1855, by crossing the spring-flowering *C. patens* with *C. lanuginosa* that the work of hybridisation was scientifically attempted. The first result was *C. regina*, which received a certificate of merit from the Royal Horticultural Society in 1862. Mr. Anderson-Henry raised several others from the same cross. This raiser was followed by Mr. Thomas Cripps of Tunbridge Wells, who operated on *C. lanuginosa*; Mr. Charles Noble of Bagshot crossed *C. Standishi* and *C. Fortunei*; the Messrs. Baker of Windlesham followed with *C. lanuginosa* × *Standishi*, and excellent results followed from each attempt.

But it was when Mr. Geo. Jackman, of Woking, using the results of some of the foregoing crosses, obtained *C. Jackmanni* and *C. rubro-violacea* that the great results came. These two were awarded certificates of merit in 1863. The spring flowering group represented by *C. patens* has received numerous accessions; *C. lanuginosa* represents the early summer flowering varieties, of which there is now a large group; *C. Jackmanni* and its allies are profuse late summer blooming varieties. There are several charming double forms, and of late years in the hands of Messrs. Jackman & Son, the Texan *C. Vorna coccinea*, with its singularly distinct blossoms, is now the progenitor of an interesting group of free flowering varieties obtained by means of seeds.

The Imantophyllum.

Imantophyllum (*Clivia*) *miniatum* came from Natal in 1854, and the earliest improvement was *concinnum*, shown by Mr. B. S. Williams in 1864 and awarded a certificate of merit. Since then several seedling varieties have put in appearance, and any advances made upon the type have been in the size of the blooms and in depth of colour, from yellow to coppery orange. But as the genus is limited to shades of yellow to orange, but little variation is possible. It is yet a showy greenhouse subject in spring and summer.

The Coleus.

The *Coleus*, once so popular, has had very few notable additions made to it of late, only three or four varieties having been certificated since 1880. Once a popular bedding plant, it is now not often used in that way, and only rarely is it grown for exhibition purposes. The latest introduction, which appeared just at the close of the last century—*Coleus thyrsoideus*, *Veitch*—promises to make a valuable blue-flowered plant for winter, the thyrses of bloom being constantly reinforced by other blossoms as the decaying ones fall. The foliage has no special beauty; the leaves are green and much lacinated.

The Dahlia.

The list of certificated Dahlias is a very long one, but the great majority of the awards have gone to the Pompon, single, and Cactus varieties, and but few comparatively to the Show and Fancy types. The modern improvement of the Show and Fancy Dahlias extends over a period of fifty years. These types were very popular as exhibition flowers up to within the last twenty-five years, and then the interest in them declined. But little improvement has been made within the last quarter of a century, and new varieties are now somewhat slowly produced. Next to the Show and Fancy Dahlias, the Pompon, or as it was at first termed, the Liliputian, Dahlia is the next oldest type in cultivation, and dates back to 1808, when Hartweg obtained a double form from the single-flowered *Dahlia coccinea*.

The first Pompon Dahlias were of continental origin and of tall growth, but when the English florists took the flower in hand the work of improvement was rapid, many beautiful varieties having originated at the Royal Nursery, Slough; also with Keynes, Seale, West, Cheal, and other well known raisers. The leading varieties are now of dwarf, compact growth, and very free-blooming. For border decoration and cutting purposes they cannot be surpassed; and so perfect in form and finish, and withal so varied, are the newer varieties, that perfection is well-nigh reached.

It was the introduction of the Cactus Dahlia—*Dahlia Juarezi*—in 1880 which gave so great an impetus to the estimation in which the Dahlia is now held. That interesting stranger, frowned upon at first by some, became the progenitor of a numerous race, and at the beginning of the twentieth century new varieties are very numerous indeed, and a greater number of novelties will be sent out in the spring than ever before in the history of the flower. The character of the

type has much changed since the introduction of the Cactus Dahlia; shapes and colours undreamed of ten years ago have been developed to an astonishing degree. Improvements in the habit of growth are greatly needed, and when these are attained the Cactus Dahlia will be the flower of the future. It is now, even with drawbacks of habit, immensely popular.

In 1882 the single *Dahlia coccinea* and *D. lutea* were reintroduced, and with them one or two old single varieties in cultivation in 1830, one in particular, named *Paragon*. The reappearance of this type was as warmly welcomed as that of the Cactus, and seedlings were raised in numbers, and for a time became very popular. Improvements with the single type will always be associated with the late Mr. T. W. Girdlestone, who threw himself into the work with great ardour, and obtained a strain of single Fancies of great beauty. Messrs. Cheal & Sons and others were also active raisers. But the fleeting character of the blossoms has told against the employment of the single Dahlia in gardens, and also for cutting purposes, and the area of its cultivation has become greatly circumscribed.

Mr. Girdlestone also originated a singularly dwarf growing strain known as *Tom Thumb*. Another development with the single Dahlia is seen in the single Cactus. This originated with the late Mr. E. J. Lowe, some twelve years ago, and in the hands of Messrs. Dobbie and Co. of Rothesay the varieties have considerably extended. They appear to be less fugacious in a cut state than the single varieties of *D. coccinea*, and there are some very pretty varieties among them. There is also a group of dwarf growing free-flowering Dahlias known as bedding, and they are very useful in prolonging the late summer display in the flower garden.

The Delphinium.

The fine and showy Delphiniums have undergone an enormous advance on what we remember forty years ago, and there are now single and double varieties of great beauty, mainly obtained by Messrs. Kelway & Son; the combination of colours in some of them are so brilliant and striking as to defy description. They form handsome and stately objects in the flower garden. The latest introduction is a very dwarf form of annual blue Delphinium, known as *Carter's Blue Butterfly*, of compact growth and about a foot in height. This is one of the most notable floral novelties of the season.

The Eremurus.

That noble perennial, the *Eremurus*, has received several additions of late, such as *E. robustus*, a species of magnificent proportions, and *E. Elwesianus*. Some protection is necessary in early spring against frost and rain, and an open position should be given the plants. The slug is very troublesome to cultivators, appearing to find in the young shoots a delicious morsel. Some useful additions have been made to the Dogstooth Violets, also to *Escallonia*, especially *E. exoniensis* and *E. langleyensis*, a hybrid between *E. sanguinea* and *E. Philippiana*, obtained by Messrs. Veitch & Sons. The genus *Eucharis* has been reinforced, the latest, *E. Burfordiensis* (*E. Mastersi* × *E. Sanderiana*). —R. DEAN.

The Great Moth of 1900.

THE moth to which has been given the ominous name of the Death's-head, Sphinx, or Hawk-moth, *Acherontia atropos*, is not only our largest British insect, it may be deemed the most remarkable too. Its thorax bears skull-like markings, it utters a peculiar cry, and sometimes it comes and goes with startling suddenness. Naturally this moth has set in motion the pens of many entomologists and other persons; its literature, if collected, would form a bulky volume. Yet even now we are ignorant of much of its economy, and its doings are still invested with some amount of mystery. One reason why the death's-head moth has been so written about is the large amount of folk-lore attached to the insect. Go down into Hampshire, and people will tell you the old belief that the moth was never seen till after the death of King Charles I.

Abroad, wide districts have been alarmed by the appearance of a number of them, the fancied precursors of an epidemic, and in English counties the entry of one into a house is thought to foretell the death of an inmate. Its plaintive cry was the voice with which the insect whispered secrets to the witches. Apart from any dislike to it as a devouring insect, the caterpillar, too, whenever observed, has been looked upon with suspicion. This species is like many others of its tribe, in being variable as to appearance, sometimes hardly seen, sometimes commoner, but it is seldom abundant in Britain. Occasionally the caterpillars are more numerous during autumn, when the moths, their parents, have not been particularly noticed. It has been said to have its headquarters in the west of England, but the south-east it has often been its haunt, and the midlands

have yielded a fair supply of specimens. We might say generally that the moth is less observed than is the caterpillar, which frequently comes in the way of Potato diggers. From various notes that have been published, it would seem that 1900 was a year when many caterpillars were found, and pupæ dug up. By a few, perhaps, this appearance of an ominous insect may be deemed a prognostic of the national calamity of January, 1901. Indeed, the preceding year, too, owing to the South African war, and other disorders, had far from a cheerful record.

Here, however, we have to look at the insect as it is related to the farm or garden, and we must class it with the enemies of our important esculent, the Potato. This is evidently now the principal food of the caterpillar, but of course, before the Potato was introduced, it must have subsisted on other plants or shrubs. A number of these caterpillars, during the later period of their growth, would consume a large quantity of leaves no doubt, still the species never seems to have been abundant enough in any field to make a notable reduction in the crop. It never touches the tubers, but it may sometimes eat down a stem close to the soil. The popular name of "lokus," spelt thus, given to it in some counties, certainly indicates a belief in its destructive powers, whether based on fact or not. Naturally the chief detectors of the insect, in both the larval and chrysalis stages, are workers engaged about the Potato fields weeding or digging up the crop. Not many entomologists have time or patience for a tedious and fatiguing hunt, of doubtful result, amongst the Potato rows. What makes a search more difficult by day is that the caterpillar, at least when getting big, conceals itself under the earth mostly, emerging to feed after sunset. Yet it has been noticed devouring the leaves of other plants quite exposed to view, and lucky collectors have taken specimens off the Tea Tree (*Lycium barbarum*) and the Bittersweet or Woody Nightshade of our hedges; it is also said to have been noticed on a Privet bush, which is not unlikely. Other species allied to the Potato, such as the Black Nightshade, may be occasionally its food, perhaps even the Belladonna.

Such a caterpillar as that of the death's-head moth, when large and plump, might be supposed to offer a *bonne bouche* which a hungry bird would delight in. Yet we have no evidence that it is eaten by birds, nor indeed that they make victims of other big caterpillars of the hawk moth tribe. But I have noticed that on hedges of Privet, where the caterpillars of the species *A. ligustri* have been feeding in the autumn, that one day there would be several on a bush, and a few days after these had gone. Of course it is possible they had moved some distance off or had been taken away by entomologists, perhaps by children. I could scarcely assert that the fact of the death's-head caterpillar (at least while large), remaining concealed by day, indicates apprehension of danger from birds, but it is possible. Seemingly the insect is not particularly liable to the attacks of insect parasites. If it were necessary to remove these caterpillars, should they be suspected of doing mischief, a search must be made by night, or it might be successful in early morning. No one has discovered the moths in the act of laying eggs amongst the Potatoes.

Many of our British moths are irregular in their appearance, common some seasons, rare or even invisible during others, which has led ingenious people to construct periods of three, five, or seven years for several of them, but I think these are little to be relied upon. The abundance or scarcity of any species may depend partly on the weather, on plentifulness of food and scarcity of enemies, or various causes not within our knowledge. The death's-head moth is eccentric; one circumstance that may have to do with its uncertainty was discovered by the late Edward Newman. What we should call its usual period of emergence from the chrysalis is July and August, but some surprise was caused by reports of specimens seen or taken as late as November. It was found that occasionally part of the autumn brood of caterpillars, instead of hibernating in the chrysalis state, appear the same year, but when they do no eggs are laid by these moths. That emergence would, of course, diminish the number of egg-laying moths during the following season. Certainly, as described to me, it has a somewhat startling effect to have this big insect enter your bedroom on an autumn evening, its eyes gleaming like tiny stars. Other moths have also this luminosity,

whether phosphoric or electric, or due to something else, we are not yet able to ascertain.

Now there is another point to be noted, the death's-head moth is a sturdy insect, but looking at its bulky body you might say the wings could not carry it far, and consider that if one of them flew a mile it had accomplished a good distance. We have, however, evidence quite overwhelming that these moths, when they will, can cover the space between England and France, or the reverse way; they have also been taken on the route between Hamburg and Hull, bound, we suppose, for the Norfolk Potato fields, having been bred on those of North Germany. An arrival of foreigners that had made a favourable journey to us may, some years, increase our number of caterpillars, and again in a year like 1900, possibly emigrants travel from our shores to the Continent. It is necessary to add that the moths do not journey on board any vessel by clinging to a spar, or hiding amongst baggage upon the deck, but they have been many times seen in the act of flying over a ship or boat. Occasionally one has been caught when settling aboard, it would seem, for a brief rest.

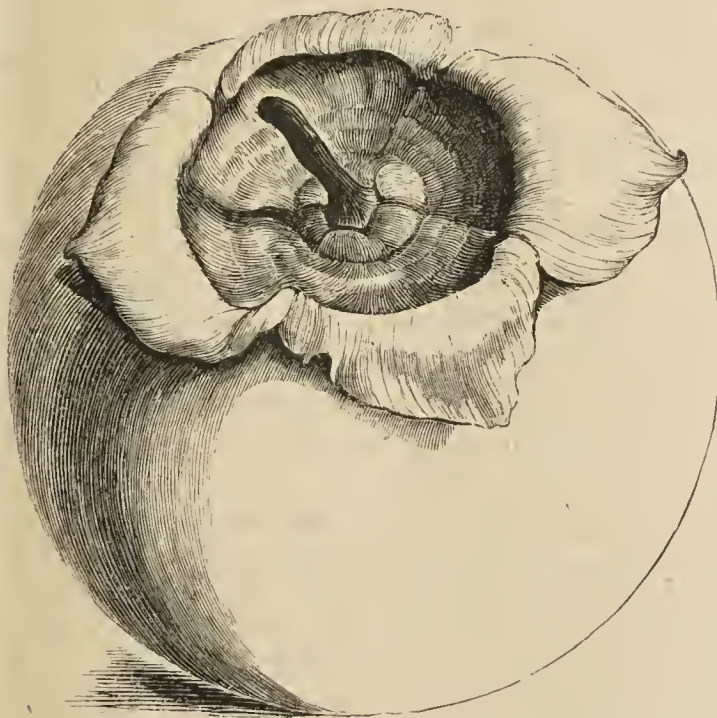
Before taking a long aerial excursion a moth may well require food, and several of the hawk moths, akin to the death's-head, are known to be frequent haunters of flowers, from which they draw the nectar. But the death's-head moth has a very short proboscis, which renders it impossible for the insect to obtain much nutriment in that way. Hence it seeks for sweets wherever they are attainable, and one

has been seen feasting on a treacle tub outside a grocer's shop. But the moth's particular fancy is a beehive when it can enter one, hence it has been regarded with no friendly eyes by bee-keepers of a bygone generation. But the modern style of hive does not suit his hawkship at all. A little while ago a specimen was seen hovering about hives near Gravesend; no doubt he went away disgusted. The old-date straw hive, with its wide entrance, gave the moth a good chance. Huber, the German naturalist, has told us of the dexterity shown by his bees, who formed barriers of wax and propolis at the door of their hives, leaving only space enough for themselves to enter. Where, unfortunately, a moth had got in and died, the bees embalmed it with propolis, as it could not be removed, and might smell unpleasantly.

Amongst the naturalists of a past generation there prevailed an idea that the moth's peculiar cry or squeak was given to it by Nature, in order that it might terrify the bees, and keep them from interfering with its movements. Bees are not usually timid insects, and

I cannot think they would be affected by the plaintive note of the death's-head. Recently some observers have detected a fragrance emitted from the thorax, which has been variously compared to the odour of Musk or Jessamine. It might be suggested this has a charming influence on bees the moth approaches. Are the moths found dead in hives killed by the bees, or is it that, having got in, they have failed to discover the way of exit afterwards? One gentleman states that on lifting up a straw hive he came upon a moth in a perfect condition close to the entrance, showing no signs of a struggle to escape. He concluded the bees had killed it, but some do not believe their stings could pierce the fur and horny integument.

This fact is singular, that the caterpillar, as well as the moth, can produce a sound. Newman and Fuscli compare it to the snapping of an electric spark; but a friend who heard one says he thought it was rather like the cry of the moth, only fainter. It has happened that the few I have had in my possession were silent. While young the caterpillar, by its yellowish or pale green hue, may escape notice easily amongst the leaves of the Potato. After the last change of skin it is very showy, the sides of the body having seven violet stripes, bordered with white, which meet on the back. The surface generally is freckled with black dots, and the tail bears a recurved tubercled horn. When possible the insect prefers to descend deep into the earth for the chrysalis change.—ENTOMOLOGIST.



DIOSPYROS KAKI—THE CHINESE DATE PLUM. (See p. 189.)

Sweet Pea Culture by Catalogue.—Compilers of seed catalogues have done remarkably well this year, says the "Boston Journal." Sweet Pea blooms will be bigger and brighter than ever. Those of us who know that this is so, because we read it in the catalogues, are willing to take it for granted.



Rose Show Fixtures in 1901.

- June 12th (Wednesday).—York†.
 „ 26th (Wednesday).—Richmond (Surrey), N.R.S.
 „ 29th (Saturday).—Canterbury and Windsor.
 July 2nd (Tuesday).—Drill Hall (R.H.S.) and Southampton*.
 „ 3rd (Wednesday).—Hanley*.
 „ 4th (Thursday).—Temple Gardens (N.R.S.).
 „ 9th (Tuesday).—Gloucester, Harrow, and Woverhampton†.
 „ 10th (Wednesday).—Worthing.
 „ 11th (Thursday).—Bath, Brentwood, Eltham, Helensburgh, and Woodbridge.
 „ 17th (Wednesday).—Ulverston (N.R.S.) and Cardiff*.
 „ 18th (Thursday).—Halifax.
 „ 20th (Saturday).—Newton Mearns.
 „ 23rd (Tuesday).—Tibshelf.

* Shows lasting two days. † Shows lasting three days.

The above are the only fixtures definitely arranged that have as yet reached me. I shall be glad to receive the dates of other Rose shows (or horticultural exhibitions where Roses form a leading feature) for insertion in future lists.—EDW. MAWLEY, *Rosebank, Berkhamsted, Herts.*

National Rose Society.

THE circular which has been addressed to all its members acquaints them with the fact that a great change has taken place with regard to the metropolitan exhibitions of the society. It has been determined to break away from the Crystal Palace and to hold the exhibition in the gardens of the Inner Temple, which has been kindly lent to them by the Benchers, and I am frequently asked, What do you think of the change? Several letters which I have received are strongly adverse to it, and prophesying in no friendly tone that it will lead to the “upsetting of the coach,” and therefore I think it may be as well to let the readers of the Journal know the reasons which have led to this change. I think all who know the dependant position in which we stood with regard to the Crystal Palace Company will not be surprised.

The Palace in one respect was of course an ideal place, and made the society independent of weather, which in our fickle climate is a great advantage, but then it had many disadvantages; we occupied quite a secondary place, and were liable to be interfered with by anything which the directors thought would be to the advantage of the Crystal Palace, no matter how it affected the Rose Show.

Thus we used some years ago to be interfered with by the German Gymnastic Society, which used to hold its annual fête on the same day, and its apparatus filled up the whole of the nave. Then when the Shah visited the show we were bundled out of the Palace altogether, and had to hold it in a crowded tent at the north end of the building.

Then at another time there was a carriage exhibition, which occupied the space usually allotted to us, and we were driven into the concert room, where bad light and narrow space put many of our exhibitors very much out of temper, their equanimity having been already very considerably disturbed by having, when they got to London, to transfer their boxes to cabs and other vehicles to enable them to reach the Palace in time. The time allowed, too, for them was very short; and although the officials were always courteous and kind, it is a difficult matter to get all arranged in time for the judges; and when exhibitors had not merely to set up their stand of exhibition flowers, but also the decorative classes, it is no wonder that that sweetness of temper, which of course belongs to all connected with the Rose, was somewhat ruffled.

But, again, the Crystal Palace Company is not in the condition that it was. The society last year had considerable difficulty in obtaining the subsidy which it had received for many years, and it could get no positive assurance with regard to the exhibition of 1901. We could not get beyond hopes and vague promises, and it was ominous that at the same time it was announced that they had diminished by one-half their contributions to the Royal Horticultural Society for their grand exhibition of hardy fruits held in the autumn. People sometimes imagine it must be an easy thing to obtain a place to hold a Rose show in London; that is not the case. Earl's Court, the Royal Botanic Society's Gardens, and the Alexandra Palace were all tried; but obstacles arose on every side, and none of these places seemed to be available.

It was then that the Benchers of the Inner Temple were

approached. We all know what great success has always attended the exhibition of the Royal Horticultural Society known as the Temple Show; how it has attracted exhibitors from all parts of the country, and what a great financial success it has been. Of course the cases are not quite similar. Our exhibition only lasts for the one day instead of four, and while the Temple Show having attractions for lovers of all kinds of plants and flowers, the Rose appeals to a smaller circle of admirers, and what, some say, are you to do if the day proves a wet one? Well, we must only face the contingency, and do the best we can. And there is one outcome of all this, and that is that it lays all our members under the obligation to strive and put forth their best efforts to insure the society against loss, by speaking about it amongst their friends so as to insure a good attendance.

It is announced that Her Majesty Queen Alexandra has consented to continue as patroness of the society; if she could only be induced to visit the exhibition, its success would be secured beyond doubt.

A guarantee fund has been started, which now amounts to nearly £300, and forms a solid background; and it is only to be hoped that the exhibition will be such a success that the guarantors may not be called upon for any portion of their contributions. The Rev. William Wilks, the secretary of the R.H.S., and a councilman are affording most valuable assistance; and the society will have the experienced aid of Mr. Wright, the Chiswick superintendent, to manage the exhibition part. To exhibitors and visitors alike it will be a great boon, while the fact that it will be held on a Thursday instead of a Saturday, will be appreciated by all those whose engagements, as clergymen in the rural districts, have been deprived of a great deal of pleasure in the exhibition by obliging them to hurry home for their duties on the following day.—D., *Deal.*

Climbing Roses.

ROSES adapt themselves to many modes of culture when the proper sorts for each phase be selected, and perhaps no Roses give a greater amount of pleasure than do climbers. Many readers can call to mind some wonderful specimens of such varieties as Gloire de Dijon, William Allan Richardson, or perhaps that queen of all, Maréchal Niel, rambling up the side of a house and giving hundreds of blossoms, at least in the case of the two first named, the greater part of the summer. And what is more showy than Crimson Rambler when in a position that suits it?

Some few Roses are seen in perfection but rarely, and the writer can remember a magnificent tree of Fortune's Yellow that covered many square yards of space and blossomed most beautifully, yet it is a variety that should have an extra warm situation; so in fact must Maréchal Niel, and for south walls these may be employed. So may Lamarque, white faintly tinted yellow, and flowering in clusters. The pretty Banksians, white and yellow, require a warm position, and should be little pruned.

A southern aspect is too hot for Crimson Rambler, and Wm. Allan Richardson must not be selected for this position because the sun has too much power, and usually bleaches the blooms as to take away that apricot tint so much admired in this variety. Gloire de Dijon and Madame Berard, a rather better form, and a seedling from it, are grand climbing Roses for any position; so is Bouquet d'Or, this also a seedling from the first named. Cheshunt Hybrid and Reine Marie Henriette are excellent for producing red flowers. Celine Forestier, a light yellow, is a splendid wall Rose. Aimée Vibert is a white variety, which produces clusters of bloom. It is a good hardy climber.

There are also quite a host of well-known varieties reputed to be distinct from the types in the matter of “climbing,” such as climbing Captain Christy, Devonensis, Kaiserin Augusta Victoria, La France, Mrs. W. J. Grant, Perle des Jardins, and others. But they are not satisfactory to us in their freedom to bloom. Reine Olga de Wurtemberg bears vivid red blooms, and is a good climber. Very hardy sorts that will do in any aspect are:—Ayrshire (red), evergreen; Dundee Rambler, white and pink; Félicité Perpetué, white; Longworth Rambler, crimson; Rêve d'Or, buff. A new Rose is Psyche, that is likely to make a capital climber. In most respects it is like Crimson Rambler, but bears huge trusses of pink and yellow blossoms. Aglaia is a good type of hardy climbing Rose. This has big trusses of yellow flowers, each bloom tiny in itself, but very effective. A seedling from it is Thalia. The flowers are pure white, and it is equally charming is a climber.—H. S.

A Cactus Curiosity.—We have heard of toads having been entombed in coal measures and in solid seams of stone for hundreds of years, and have yet lived on being brought to light, and now we are told that in the Botanical Garden, Berlin, there is said to be a Cactus which has been growing in a hermetically sealed glass for seven years. It is supposed that fungi in the soil germinate, and in dying supply the Cactus with carbonic acid. Water may also come from the decomposition of cellulose.

NOTES & NOTICES

Weather in London.—The weather in and around London during the past seven days has been at least mild. For pedestrians, however, the state of the streets and roads has been frightful. Rain, and on one or two occasions an inkling of snow, has fallen. Early flowering trees, such as the Bird Cherry, are bursting into leaf.

Weather in the North.—Only on one morning of the past week was there a slight touch of frost. The days have been generally dull, and showers have been frequent. Both Sunday and Monday, with occasional showers and gleams of sunshine, were spring-like though somewhat cold.—B. D., S. Perthshire.

Weather in Ireland.—The genial conditions of the past few weeks, with a cessation of rain, but an occasional light frost, has enabled our bulbous types to advance, whilst fruit trees have commenced to break away in several quarters; it is to be hoped that severe weather will not start. March has held its reputation of "month of many weathers" by raining, but the clouds have seemingly vanished, leaving climatic conditions pleasant.—A. O'N.

Appointment.—Mr. T. Parkin, for the last nine years head gardener to Wm. Mitchell, Esq., M.P., Fern Hill, Stackstead, Bacup, has been appointed in a similar capacity to J. J. Hunt, Esq., Grimston, York. He is succeeded at Fern Hill by Mr. Wm. Chapman, who has been four years foreman at Sand Hutton, York.

Sweet Pea Society.—A meeting will be held at Winchester House, Old Broad Street, E.C., room 21, on Tuesday, March 12th, at 5.30 P.M., with the view of forming a National Sweet Pea Society. The chair will be taken by N. Sherwood, Esq. Anyone interested but unable to attend should communicate with the hon. sec. (pro tem.), C. E. Wilkins, 19, Lyndhurst Road, London, S.E.

Royal Scottish Arboricultural Society.—The first meeting of the new council was recently held at 5, St. Andrew Square, Edinburgh, Mr. D. P. Laird, vice-president, presiding. Twenty-nine proposals for membership were read a second time and accepted, and four proposals were intimated for acceptance at next meeting. Committees and conveners were appointed, the dates of future meetings fixed, and other routine business transacted.

Royal Meteorological Society.—The last monthly meeting of this society was held at the Institution of Civil Engineers, Westminster, Mr. W. H. Dines, B.A., president, in the chair. A loyal and dutiful address of condolence and homage to his Majesty the King was agreed to. Mr. E. Mawley presented his report on the phenological observations for 1900. During the greater part of the winter and spring the weather proved cold and sunless, but in the summer and autumn the temperature was as a rule high, and there was an unusually good record of bright sunshine. As affecting vegetation, the two most noteworthy features of the phenological year ending November, 1900, were the cold, dry, and gloomy character of the spring months and the great heat and drought in July. Throughout the whole of the flowering season wild plants came into blossom much behind their average dates; indeed, later than in any year since 1891. Such spring emigrants as the swallow, cuckoo, and nightingale were also later than usual in visiting these shores. Taking the British Isles as a whole, the crops of Wheat, Barley, and Oats were all more or less under average. The yield of hay was poor in the southern half of England, but elsewhere varied from a fair to an abundant crop. Turnips and Swedes were almost everywhere deficient, but there was a heavy crop of Mangolds. Potatoes were under average. This was a bountiful year as regards fruit, the yield of Apples, Plums, and all the small fruits being in excess of the average. Mr. A. E. Watson read a paper entitled "A Review of Past Severe Winters in England, with Deductions Therefrom." From an examination of the records of the severe winters of the last 300 years he has come to the conclusion that they are most frequent in the years with the numbers 0-1 and 4-5. He is also of opinion that the severe winter in the middle of each decade is generally a late one (January to March), while that at the beginning or end of each decade is generally an early one (November to January).

An Educational Flower Show.—We learn that Lady Warwick has schemes for what is termed an Educational Flower Show, to be held at Reading during August next.

Mr. W. Iggulden, F.R.H.S., is the subject of an appreciative article in the current issue of "The Agricultural Economist." His experiences and work in commercial horticulture is interestingly detailed.

United Horticultural Benefit and Provident Society.—The annual meeting of the above society will be held at the Caledonian Hotel, Robert Street, Adelphi Terrace, Strand, W.C., on Monday evening next, March 11th, at 8 o'clock. W. Roupell, Esq., will preside.

Glasgow Botanic Gardens Management.—With a view to secure greater unity of management in the work of the department as a whole, it is recommended by the Parks Committee that the duties of Mr. James Whitton, the superintendent of parks, should be extended to the Botanic Gardens, which are at present under the charge of Mr. Daniel Dewar, curator.

Presentation to Mr. Wm. Smythe.—We learn with interest that Mr. Wm. Smythe, who for long was head gardener at Basing Park, Alton, and who has retired, was presented on February 19th with a purse of sovereigns subscribed to by his late garden assistants, and also by the working men on the estate, as a mark of their esteem. We trust Mr. Smythe will be spared for a long time to enjoy a happy leisure.

The Wood Leopard Moth (*Zeuzera aesculi*).—As my note regarding the destruction to timber of trees in the London parks by the caterpillar of above moth has caused a considerable amount of public and private correspondence, might I ask you to state that I have forwarded to the Forestry Museum, Surveyors' Institution, Westminster, specimens of wood showing the caterpillar, chrysalides, and tunnels made by the former? Incidentally I might mention that around London the wood leopard moth is equally abundant with the goat moth, though more difficult to detect.—A. D. WEBSTER.

The Fruit Growers' Year-Book.—We take the opportunity to mention that the ninth issue of this book has now been issued. The number is bulkier than any of the issues preceding it, consisting of no fewer than 376 pages, every one of which contains information of peculiar value to the British fruit grower and market gardener. Particular mention should be made of the invaluable schedule of labour prices for fruit growing and market gardening—a schedule much wanted, as no recognised scale for payment of work of this character has hitherto been in vogue. Mr. Monro, the well-known Covent Garden salesman, writes interestingly of the growth of Covent Garden Market, and others contribute information concerning profitable varieties of fruit and vegetables, and the new varieties of 1900. We may have occasion to refer again to this little publication.

Obituary.—It is with deepest regret that I have to send you the announcement of the death of Mr. John James Alliston, who for twenty-six years held the appointment as head gardener at Hazlegrove House, Sparkford, Somerset, where his valued services were highly appreciated. He was a friend of the late Mr. Wildsmith, and, like him, certainly belonged to the go-ahead brigade, and in garden subjects generally had few equals. Much credit is due to him for the taste he displayed in reorganising the kitchen garden and planting the now beautiful Yew and Cupressus hedges running north, east, south, and west, with an accompaniment of herbaceous borders, which remain to perpetuate his memory. Violets and Begonias were his favourites. His end came peacefully on Sunday morning last at the age of seventy-two, after a somewhat lengthened illness, caused by the rupture of a blood vessel, which caused partial paralysis of the brain.—G. GREGORY, Hazlegrove.

The Forest of Dean.—The replanting of certain areas of the Forest of Dean is in progress. Some 600,000 two-year-old Larch trees were planted on a system of rough nurseries, with such good results that the same plan will be followed wherever possible. The system is as follows:—In vacant spaces rows were dug in which two-year-old Larch, or seedling Oak, were planted about a foot apart. The rows were then left untouched for two years, with the exception of having the Ferns and grass cut from between them in the summer. At the end of two years the rows were gone through, and about four out of every five of the trees were taken up and planted in pits in other vacant spaces, thus leaving a full stock for crop in the rows. This method, which was followed as a matter of necessity to begin with, has found considerable favour with the deputy surveyor.

National Rose Society.—The honorary secretaries have much pleasure in announcing that Her Majesty Queen Alexandra has consented to continue to be the Patroness of the society, a post which she had for many years held as Princess of Wales.

Derbyshire Agricultural and Horticultural Society.—The schedule of prizes in connection with the horticultural department of the above society has been issued. We note that this will be the thirty-ninth annual exhibition, so that the Derbyshire Agricultural and Horticultural Society has had a long run of activity. The show will be held at Derby on Wednesday and Thursday, September 12th and 13th. The secretary is Mr. Sydney Burton, Canal Office, Derby.

Brighton and Sussex Horticultural Society.—Besides having a Mutual Improvement Association for the reading of monthly papers, this robust southern horticultural society holds three shows annually; and the schedule of these has reached us. The spring show will be on April 16th and 17th; the summer show on August 27th and 28th; and the Chrysanthemum show on November 12th and 13th. Particulars may be had from the secretary, Mr. J. Thorpe, 53, Ship Street, Brighton.

Glasgow International Exhibition.—The schedules for the fruit and flower shows to be held at the Glasgow International Exhibition have now been issued. Wednesday and Thursday, August 28th and 29th, will be reserved for pot plants and cut flowers, followed on 4th and 5th September by fruit and vegetables. Many novel competitions are included in the programme, and £1000 is offered in prizes and trophies. In connection with the second show there will be special displays of fruit, to which foreign nations, states, and dependencies of Great Britain are invited to contribute. The importance of such displays, it is pointed out, cannot be overestimated, as, in addition to interesting the general public, the fruit will be brought directly under the notice of very large buyers, with every prospect of finding a profitable place in a permanent market. Both shows are under the joint management of a special committee of the exhibition and representatives of the executive of the Glasgow and West of Scotland Horticultural Society, with ex-Bailie Simons as convener and Mr. Hugh M. Mackie, C.A., secretary.

Horticultural Science.—At a recent meeting of the Torquay Gardeners' Association, Mr. Geo. Lee said that horticultural science dawned in the Elizabethan age, yet it never afforded any distinct light to gardening till the nineteenth century, and the branch of hybridisation had greatly developed in the last two or three decades. To gardeners it had introduced numbers of flowers and plants of great beauty and usefulness, especially in connection with Begonias and Orchids, and for the latter they were largely indebted to the researches of Charles Darwin. With equal success had the hybridist dealt with Roses, Fuchsias, Chrysanthemums, Azaleas, Dahlias, Daffodils, Ferns, and other plants, and it seemed impossible to over-estimate the results his future labours in improving the flowers, fruits, and foodstuffs. New breeds of Wheat in America and other Wheat-growing countries had also been raised. It had been demonstrated by experiments that new Wheats bred from old and standard varieties, would increase the present yield of Wheat in the regions to which those particular Wheats were adapted by 4 bushels per acre. If that could be accomplished in the United States alone, it would add upwards of 180 million bushels a year, worth at a low valuation over £28,000,000.

Reading Gardeners' Mutual Improvement Society.—Mr. F. Lever read a paper on Begonia culture at the last meeting. The president, Mr. Leonard G. Sutton, occupied the chair. A very interesting discussion followed, in which Messrs. L. G. Sutton, Hinton, Bright, Wilson, Fry, Wicks, Neve, Townsend, Harris, Macdonald, Cretchley, Pigg, G. Smith, Alexander, and Barnes took part. Mr. F. Lever; Mr. A. F. Bailey, The Gardens, Leopold Lodge; Mr. H. House, The Gardens, Oakfield; Mr. E. S. Pigg, The Gardens, Samoa; Mr. F. Fry, The Gardens, Greenlands, Alfriston; Mr. H. Wilson, The Gardens, Lower Redlands; Mr. W. Townsend, The Gardens, Sandhurst Lodge; and Mr. F. Bright, The Gardens, Whiteknights, staged exhibits. The former four exhibitors entered for the society's certificate of cultural merit, and the judge's awards were to Mr. F. Lever for his *Oxaloid-glossum*, and to Mr. F. Bailey for his beautiful batch of *Star Primulas*. A warm discussion took place with regard to the electing of a lady gardener as an "ordinary" member of the association, but being put to the vote 90 per cent. voted in favour of the lady being elected as an ordinary member.

"The Plant World."—Those two excellent popular botany publications, "The Asa Gray Bulletin" and "The Plant World," have been amalgamated, and will henceforth be published as "The Plant World."

Bristol and District Gardeners' Mutual Improvement Association.—The fortnightly meeting of the society was held at St. John's Parish Room, Redland, on Thursday, February 28th, Mr. G. Brook presiding. Mr. McMillan of Stoke Bishop read a paper on the "Management of Outdoor Wall Fruit Trees," it being the essay which secured the first prize in a competition for prizes offered by Mr. W. A. Garaway to nnder gardeners. Mr. McMillan treated in his paper of the culture of the Peach, Nectarine, Apricot, Fig, Plum, Cherry, Pear, and Apple, giving in each case his opinion as to planting, training, disbudding, pruning, and the treatment of insect pests. Prizes offered for two pots of Narcissus were secured by Messrs. Price, McCulloch, and Lewis. Certificates of merit were awarded Messrs. Frampton (*Primula*, white; *Platyclinus glumacea*) and Murrell (collection of Orchid blooms).

Knighton Horticultural Society.—Since the second meeting of the general committee of this society, whereat Messrs. J. R. Bache and W. James expressed their willingness to continue in office as joint hon. secretaries, no little anxiety has been apparent as the result of a well-founded rumour to the effect that Mr. Bache had declined to act, which naturally impelled Mr. James also to consider the advisability of his so continuing to hold office alone, but at a meeting of the committee held last week we are informed that these two gentlemen will continue their work as joint hon. secretaries to this enterprise, with the assistance of Mr. H. Matthews, solicitor, who has consented to act in conjunction. The large attendance at the meeting showed the interest of the townsfolk in the annual event, and it is therefore satisfactory to know that everything seems now likely to proceed successfully.

Sussex Weather.—The total rainfall at Abbots Leigh, Haywards Heath, for the past month was 2.21 inches, being 1.72 inch above the average. The heaviest fall was 0.54 inch on the 5th; rain (or snow) fell on thirteen days. The maximum temperature was 52° on the 28th; the minimum 18° on the 16th. Mean maximum 41.03°, mean minimum 30.03°; mean temperature, 35.53°, which is 2.06° below the average, and the coldest February we have had since 1895. Temperature below freezing point on sixteen days; snow on six days.—R. I.

February Weather at Belvoir Castle.—The wind was in a westerly direction eighteen days. The total rainfall was 1.55 inch, which fell on eighteen days, and is 0.26 inch below the average for the month; the greatest daily fall was 0.26 inch (as snow) on the 5th. Barometer (corrected and reduced): highest reading, 30.626 inches on the 15th at 9 A.M.; lowest reading, 29.198 inches on the 27th at 9 A.M. Thermometers: highest in the shade, 51° on the 28th; lowest in the shade, 15° on the 14th. Mean of daily maxima, 39.71°; mean of daily minima, 29.82°; mean temperature of the month, 34.76°; lowest on the grass, 13° on the 14th; highest in the sun, 92° on the 15th; mean temperature of the earth at 3 feet, 40.03°. Total sunshine, 40 hours 20 minutes, which is 43 hours 26 minutes below the average for the month. There were nine sunless days.—W. H. DIVERS.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901. February and March.										
Sunday .. 24	W.S.W.	deg.	deg.	deg.	deg.	ns.	deg.	deg.	deg.	deg.
Monday .. 25	W.S.W.	41.1	39.1	46.3	39.5	—	39.3	40.9	42.6	34.2
Tuesday 26	W.S.W.	41.4	39.8	49.3	37.5	—	39.9	40.5	42.8	30.5
Wed'sday 27	W.S.W.	42.9	40.1	44.9	39.0	0.30	40.4	41.0	42.8	29.2
Thursday 28	W.S.W.	44.8	43.7	48.7	41.0	—	41.1	41.3	43.0	39.0
Friday .. 1	S.S.W.	43.4	41.7	51.6	38.5	0.16	41.4	41.9	43.2	28.2
Saturday 2	S.S.W.	47.6	46.1	53.3	37.3	—	42.1	42.2	43.2	26.2
		44.7	43.7	53.6	35.6	0.21	42.0	42.5	43.3	26.2
MEANS ..		43.7	42.0	49.7	38.3	Total 0.67	40.9	41.3	43.0	30.5

The weather has been warm and springlike, but at times dull and cold.



A National Sweet Pea Society.

I HAVE received a circular signed by Charles E. Wilkins advising me that a meeting will be held in the City on Tuesday, March 12th, with a view of forming a National Sweet Pea Society; and the reason assigned for this course is "that the labours of the bicentenary committee should not be lost." What is meant by this? There is no fear whatever of the labours of the bicentenary committee being lost. At the present time the executive committee are putting through the press a full report of the proceedings of the celebration, and thus a permanent record of them will be handed down. The executive committee having published its report, will then lay it before the general committee, and that body will have to determine whether the committee shall be continued in some permanent form or whether it shall dissolve. Seeing therefore that the bicentenary committee has not yet completed its labours, it seems premature to propose to form a National Sweet Pea Society while this truly national committee is still in existence, and quite capable of taking care that its labours are not lost.—RICHARD DEAN, *Hon. Secretary to the Committee of the Sweet Pea Bicentenary Celebration.*

Book Gardeners.

SOME few years since I seriously thought of entering for the R.H.S. exams, but after looking up some of the questions asked at previous examinations, I failed to see how answering a few questions as to the structure of a certain bulb or flower, or describe the process of germination of a particular seed, would prove that I was at all capable of taking charge of a garden establishment, even though I obtained the maximum number of marks. It is not a case of what do you know, so much as what can you do, with employers. Can you keep up a good supply of flowers, fruits, and vegetables, and at how little cost?

The efforts of the R.H.S. are no doubt most praiseworthy in instituting exams with the idea of raising the status of the gardener. But will it better the present position of the gardener in any way? Will it raise the standard of wages? Is it likely to induce employers to keep up a full garden staff, instead of the ever increasing reductions, which makes the most important point a gardener has to study "How to make three do the work of four?" I think that to test anyone's knowledge by examination much the best way would be to select a subject or a group of subjects, and require to be written say, an essay in so many words, giving the practical details as to cultivation, and treatment on the appearance of disease. But after all the best test of a gardener's knowledge is what he produces. I know one or two most able and successful gardeners, who have served in some of England's famous gardens, the products of the gardens in their charge being of the highest order, yet they have admitted to me that in the exams under notice they would probably not figure very high.

I often think that those who write so much about horticultural schools lose sight of the fact that there are scores of publications on every conceivable point in horticulture by eminent and practical men; also that we have at our disposal so many excellent gardening periodicals.—W. HENRY WILSON.

Manures and Leguminous Plants.

It is not necessary for me to take up the cudgels in defence of Mr. J. J. Willis, but I wish to assure him that there are some at least of your readers who do not despise his teachings; in fact, I find they so much agree with what I have picked up from various sources, that I literally devour his contributions, especially such as are based on the Rothamsted experiments, of which I have extracts in various elementary works, and wish I had more. Gardeners, as such, have not the training to fit them to carry out experiments with mathematical precision, and in nine cases out of ten erroneous conclusions are formed from so-called experiments. The ordinary case is that a man sets himself to prove what he has already made up his mind he will prove. He tells you, for instance, that Peas require a very large proportion of farmyard manure to produce a heavy crop. He will put the manure in, and grow a good crop accordingly. Do you want anything more convincing than that? Well, I have heard of a nut being cracked by a 20 ton hammer, and think it quite possible it might have been done with less power, and it so happens that some of us can grow an equally good crop of Peas as can be grown on a dunghill by simply pulling up a row of Cabbage

stumps, making a drill, flooding it with clear water, sowing the seed, and giving nothing but a dressing of superphosphate and kainit. Of course this does not prove that Peas require no nitrogen or ammonia, any more than my friend's experiments prove they want as much as Mangold Wurtzel or Rhubarb.

Some years ago I visited Mr. Milne, gardener to Miss Jarratt of Camerton Court, not far from Radstock, and had not gone far before I paused to look at an extra good crop of Brussels Sprouts growing apparently in nothing but red brickdust. "Come along," said my friend, "we don't want to look at Sprouts to-day." But before he could induce me to shift he had to fetch a spade and dig down fully a couple of feet and take up a plant with roots as nearly entire as possible. I expected to find soil containing vegetable matter below; but, no! there was nothing but roots and brickdust, the former of which we followed to the end, but not the latter. Now most cultivators know, or ought to know, that vegetable matter partly consumed by smother burning is very rich in almost everything that is necessary for plant life, but here everything had been consumed that was consumable by fire. A coal pit is close by, and the owner of the garden is also the owner of the pit. Most gardeners know of patches outside the dressed grounds where there is much that is undesirable in the shape of both animal and vegetable life; such a patch was probably here before I saw it, and now I cannot detect a particle of vegetable matter in any shape except the Sprouts. Where did they get their nitrogen from? I believe every trace of carbon had been consumed, and I was assured no manure liquid or solid had been applied.

Unfortunately gardeners are not the only persons who play with experiments nowadays. Since the demand sprang up for technical education there has, under county councils and other governing bodies, arisen a multitude of teachers who experiment in their fashion for one, two, or three years, and then give to the world their mature judgment on subjects such as Sir John Bennett Lawes was only beginning to learn. I am afraid some of us learn a little too fast.—WM. TAYLOR.

Vanilla planifolia.

IN the economic house at the Glasgow Botanic Gardens there is at present a very interesting plant of this West Indian Vanilla just ripening its fruits, which number over 400. A full grown French Bean will give a fair idea of the shape and size of its pod. It flowered in June of last year, so it takes a good time to ripen its fruit in this part of the country. Very shortly the house in which the plant is growing, and in the adjoining ones as well, will be filled with the pleasant odour of the Vanilla. This is the Vanilla which is used for commercial purposes.—A. B.

Women Gardeners.

WITH interest I have read E. Welthin Winlo's article on page 557, re women gardeners, and take it for granted that she classes gardeners with garden labourers by the way she has written. I am sure she would soon find out her mistake by going round any garden of note, and taking notice of the men employed. For generally speaking, nowadays the gardener starts as a "foreman's boy," and works his way up inside, with, perhaps, a few years in the kitchen garden. If Miss E. W. Winlo will study any of the advertisements in the gardening papers every week she can then see how many years of experience are required before a man can think of taking a situation and calling himself a gardener. As a rule gardeners are very quick at picking anything up they may see done at other places, and often when looking round a great deal of discussion follows whilst passing through on various subjects. But for all this no one can learn gardening unless they actually do the work themselves. It is all very well watching and being taught, but that is not doing it yourself. We know it is well to keep our eyes and ears open, but without other or further experience this alone is useless. No true gardeners have the confidence to take a place without having the real practical knowledge. I know in gardening there is always something new to learn, and much is learnt from mistakes and failures; but to anyone who wishes to be a gardener, my advice is to get into well kept gardens and go through the various departments. Anyone doing so would be a more fit person to take charge of a garden than one who has gone through the courses of lectures, &c., at one of the colleges. I do not wish to run down the work that may be done at any of these places; but is it possible for any person to hold their own against one that has put study and practice together for a lifetime? At the present time the labour and expenses are so cut down in the garden that it is only with sound judgment and forethought that ends are made to meet. No one can deny but that this is getting a general thing right through England. There may be plenty of men and women that know how to do work by reading, or think they do, but when it comes to superintend work and men under them, they find their mistake. Then the man is soon picked out that has had a thorough practical learning, and been through the mill himself. This man can show and explain how things should be done to those under him.—JOHN BOTLEY.

The Lily Pond in Greenwich Park.

PERHAPS in no other garden or grounds around London is there a more natural or interesting sheet of water than that in the Royal Park at Greenwich. When it was suggested a few years back that the better kinds of Water Lilies and other aquatic plants might be successfully grown there the notion was ridiculed by not a few, but that success has amply crowned the effort a glance at the accompanying illustration will clearly show. Marliac's best Water Lilies have become quite established and flower freely. The Cape Pondflower runs rampant, while the Bogbean, Water Ranunculus, Arrowhead, Catstail, and hosts of other native and foreign aquatics prove pretty conclusively that even in the smoke-begrimed outskirts of the great metropolis these beautiful flowering subjects find a congenial home.

The three clumps of Water Lilies in the foreground of the picture (page 197) are Marliac's red and pink forms, which bear an abundance of big, showy flowers, the most remarkable circumstance about which is that they do not become in the least soiled by the atmospheric

warbler, moorhen, and coletit all breed regularly by the pond side, the old Oaks and the Chestnuts fostering the kestrel and sparrow hawk carrion crow (by no means common), goatsucker, ringnecked dove, and common and rock pigeons, the latter described by Darwin as the parent of all our domesticated forms.—A. D. WEBSTER.

Planting Park and Avenue Trees.

PARK and avenue trees, both for timber and ornament, are a valuable addition and permanent features of interest in a gentleman's demesne. These trees, if designed to cover a large extent of landscape, which would necessarily be the case if the park in question is of great extent, should be so arranged in their relative positions as not to appear to the eye of a spectator crowded together in clumps unnecessarily large, but arranged so as to open up vistas of beauty in all directions. *Araucaria imbricata* is an ornamental object in a park if regarded simply for



"THE WILDERNESS:" A PICTURESQUE SCENE IN GREENWICH PARK.

impurities, which so often leave a filthy black scum on our London ponds and lakes, possibly owing to the flowers closing at night and remaining so during dull weather, when soot and dirt do most abound. Further away may be seen the Cape Pondflower, and on the left the deliciously sweet flowers of our native Bogbean and Water Ranunculus. The silver and golden-leaved Irises have a fine effect when carpeting the water beneath the shade of the Babylonian Willow, and in company with the giant Typhas and better forms of *Arundo*. There are few distinct gains without losses, and the Canadian Pondweed (*Elodea canadensis*) is the plague of our pondman's life, for even the hundred and one loads of this merciless creeper that were removed during the past summer seem only to pave the way for further and more extended growth. The undulating ground around the pond is planted with big irregular clumps of many and varied bulbs—the best Daffodils, *Chionodoxas*, Crocuses, Snowdrops, and Scillas; while near the water margin the Gunneras, Mocassin Flower (*Cypripedium spectabile*), giant Fennels, Royal Fern, and hosts of other damp-loving subjects, not forgetting the startling Loosestrife and Willow Herb, actually revel in their surroundings.

The other picture is that of the wilderness by the pond side, which is most remarkable for its growth of bracken, and as being a sanctuary for many birds that are extremely rare around London. The kingfisher is a frequent visitor, while the wagtail, lesser grebe, sedge

ornament, but useless as a timber tree. I have in my mind's eye now a plantation of this tree, and the plantation is in Snelston Park, the residence of John Harrison, Esq., about two miles from Ashbourne. This plantation of specimen *Araucarias* is really a fine sight as an ornamental object, but rather sombre and funereal in its appearance, consisting only of one kind of tree. It is not the planting of ornamental trees alone which should be aimed at, but the judicious combination of those kinds of coniferous and forest trees suitable both for timber and ornament. In this park to which I have alluded these two distinctive features of landscape scenery are carried out. I believe this park was designed, laid out, and planted by the late Mr. Ponting of Plymouth, well known as an able and practical master of forestry and all matters connected with arboriculture.

There are some fine specimens of "the forest king," also of English Elms, Sycamores, Horse Chestnuts, and Beech in this park; but the ordinary forest tree planting is chiefly at the outskirts, arranged so as to form a boundary. In forest planting with a view to profit and to make the trees available as timber as soon as possible, it would be advisable not only to plant thickly but to plant a class of trees suitable for the land, and of a vigorous growth. With reference also to trees suitable for avenue planting, I would call the attention of my readers to two fine avenues in this neighbourhood worth a visit—one at Tissington Park and the other at

Osmaston Manor. There is also a fine avenue of Lime trees running through the old churchyard of St. Oswalds at Ashbourne.

In reference to forest planting, the reason for the trees being planted thickly is to induce a quicker growth when young, and when arrived at a certain stage take every other plant out. The plants left will then make finer timber and attain a greater girth than they would otherwise have done if this plan had not been adopted. Snelston Park is now becoming rather overcrowded with specimen and timber trees; still, when there is such a great variety of hues and colouring given to the landscape by the splendid arrangement of the trees, we must not be too ready to find fault with a matter of detail. I might suggest an improvement to the appearance of the Coniferous specimens might be effected by planting a small belt of the double Gorse round each tree. When these are in bloom the effect would be pleasing. Of course in park scenery, for an effective finish there should be a lake. This, planted around with hardy Rhododendrons and Azaleas, when in flower would add decidedly to the scenic effect.

In order to protect the stems of the specimen trees from injury by cattle, another consideration of importance is to have nice light tree

Figs Under Glass.

THE earliest forced trees in pots started in November or beginning of December will soon complete the first swelling. They remain stationary for some time in the process of flowering, and as this is the most critical time in their culture every care should be taken to avoid a check. Insufficient moisture or excessive fire heat will cause the fruits to drop when they should be commencing their last swelling, therefore keep the temperature steady. If mild it may be kept at 60° to 65° at night, but if the weather is cold 5° less is safer, and what is lost at night may be gained in the daytime by closing with plenty of heat and moisture (but not with the latter hanging on the fruit), when a rise of 10° to 15° may be indulged in without producing a weak or elongated growth, keeping the temperature through the day with gleams of sun at 70° to 75°, otherwise 65° artificially.

Afford copious syringings on all favourable occasions as a means of keeping down red spider. It is prone to attack foliage most in proximity to hot-water pipes, and should be prevented spreading by sponging the leaves carefully with soapy solution, 2 ozs. to a gallon of water. To encourage the swelling of the fruit top-dressings of rich



THE LILY POND IN GREENWICH PARK.

guards for all the ornamental and Coniferous species. Nice compact specimens of *Picea Normanniana* and *P. nobilis*, if planted in prominent situations, combined with the Deodar Cedar, would add a picturesque feature to the landscape. If there are any still watercourses running through the intended park plant along the margins the dwarf species of Willows, so as to droop over the water and so hide any unsightly appearance. There are some nice varieties of ornamental Oaks at Snelston, and among them the Scarlet-leaved *Ilex* is a prominent object.

The grounds and gardens of Snelston Hall are also very fine, both in themselves and also in their outward surroundings, and well deserve a visit, but if there is one spot of ideal beauty more than any other it is the rock garden; here Nature and Art have both combined to help the effect.

The time to visit Snelston, may I suggest, is either in the spring time of its loveliness or the autumn of its decay, when the foliage is changing its tints, preparatory to Winter's stern approach. Calwich Abbey, with its fine avenue of Elms, is also well worthy of a visit when in the neighbourhood.—A. W. GODWIN.

[As instances of the effective park and woodland scenes which Mr. Godwin explains, we would refer to the illustrations on pages 196 and 197.—ED.]

material should be applied to the surface of the pots. Supply tepid liquid manure steadily to the roots, giving it in sufficient quantity to pass through the pots. Avoid crowding the growths, stopping at about the fifth leaf, tying out the shoots as the growth advances, and cutting out superfluous shoots. These, however, are best prevented by rubbing them off early, so as to give those left all the light possible. The fruit, to have colour and high flavour, must have full exposure to light and a circulation of warm, rather dry air.

The planted-out Fig trees started early in the year will require disbudding, removing all the overcrowded shoots; and where there is not room for laying in a long shoot, yet space for some growth, the shoots may be pinched at the fifth or sixth leaf to form well-developed so-called spurs for the second crop, the leading and successional shoots, where there is space, being allowed to extend, as these invariably afford the finest fruits and longest succession. Water the border as required with liquid manure, taking care not to apply it too strong, and mulch with an inch of rather rich and rough compost, which attracts the roots to the surface. Trees in restricted borders and needing more support may have roots encouraged from the collar by placing turves interspersed with lime rubbish and manure in contact with it, and by extending the material outwards a quantity of feeders will be secured, which if duly supplied with liquid manure will greatly assist the trees in swelling. Syringe the trees twice a day in favourable weather, damping only on dull days, and keep the mulching moistened as it becomes dry.—GROWER.



Beautiful Plums and Peaches have been on sale in Covent Garden Market and elsewhere for some weeks. These fruits are importations from Cape Colony, and seem to sell speedily.

Points of a Good Strawberry.—Mr. F. L. Jansen, in a comprehensive paper on the Strawberry, published in the "Agricultural Gazette" of the Department of Agriculture, N.S.W., thus summarises the desiderata of a good Strawberry:—"The qualities essential to a first-class variety are: Fruit large, of a regular, firm, and nearly uniform size, to the end of the season; texture fine, flesh rich and firm, with a moderate amount of acid, and with an aromatic flavour. A longitudinal cut should show no hollow space; the seeds should be deeply embedded, and the calyx set high, so as to be easily detached. The plant should be hardy, vigorous, and strong, with perfect flowers—i.e., self-fertilising, a prolific bearer, with stalks of sufficient length to keep the fruit out of the dirt."

When Tobacco is Food.—"Experts," said a well-known judge on one occasion, "can prove anything," and this is probably the attitude which will be taken up by many ladies with regard to what the "Lancet" has to say about tobacco. This is the opinion of the leading medical journal:—"It is difficult, then, to believe that tobacco is anything but a real help to men who are suffering long labours and receiving little food, and probably the way in which it helps is by quieting cerebration—for no one doubts its sedative qualities—and thus allowing more easily sleep, which is so all-important when semi-starvation has to be endured. We are inclined to believe that, used with due moderation, tobacco is of value second only to food itself when long privations and exertions are to be endured."

Are Insecticides Dangerous to Fruit?—One of the great objections commonly urged against the use of the well known American insecticide, Paris green, or dressings containing arsenic, sulphate of copper, and other poisons, is that they are liable to render Apples, or other fruit, poisonous or dangerous to those by whom the fruit are consumed. Experiments carried out in the United States, where, says the "Farmer's Gazette," such dressings are much more extensively employed than in these countries, go to show that there is absolutely no danger on this score. It has been demonstrated again and again both by analyses and practical tests, that the most frequently sprayed fruit trees do not render the fruits produced by such trees in the least dangerous to higher animals. In one experiment it was found that the total quantity of the poison collected by the most careful chemical methods, from a whole bushel of Apples did not contain arsenic enough to constitute a tonic dose for a man, and he would have to eat the whole bushel at a sitting to get that much.

February Flowers.—There is, perhaps, no month in the year which has so little of a fixed character in regard to weather as February. It may be, as it has proved this year, cold and wintry, or it may chance to turn out, as it does in a few exceptional seasons, delightfully warm and pleasant. But even in the very worst years the lover of wild flowers, as well as the gardener, is made conscious that spring is on its way. There are some plants which not all the rigour of the elements can retard from putting forth their buds after the Feast of Candlemas. The Snowdrop is, of course, among the first, but the Snowdrop has come to be almost purely a garden flower; it is rarely met with in its wild condition nowadays, though it undoubtedly belongs to our native flora. But the Primrose is hardly behind the Snowdrop as one of the harbingers of spring, and even in the coldest of Februarys it is to be found on sunny hedgerow banks. Happily, the Primrose has not yet been extirpated from its native haunts, though that fate may well be apprehended for it, if those who pluck the flowers to celebrate Primrose Day will not learn to do so without pulling up the roots. February Violets are rare, except in the garden, and only in very warm seasons and in very sheltered spots can one hope to gather them. The true Sweet Violet is the product of grey skies and wintry winds and rains, even of snows, it may be.

Marguerite Carnations bloom so profusely and over such a long season that they should be planted pretty freely. They do not require too much manure or water. Plant them in an open position, giving each quite 15 inches of space. They should be planted firmly, especially if the soil is on the light side. A sowing should be made in April.

Apples and Pears are the fruits most grown in the Mt. Barker district of Western Australia, and they seem to do the best. The favourite Apple varieties are Rokewood, Yates, Jonathan, Kentucky Red Streak, and Munroe's favourite. Everywhere where the trees are bearing the growers appear satisfied with the returns, and tell me their orchard is the best paying part of the farm.

Orris-root.—We learn that the Orris-root, which is used as a basis of many perfumes by the manufacturers of England, France, and Germany, is obtainable only around Florence and in the neighbourhood of Verona. Manufacturers, therefore, have to look to two small districts in one particular country for the whole of their supplies of an almost indispensable article. A syndicate, supported by a powerful bank, has recently secured the entire bulk of the Veronese crop and nine-tenths of that of Florence. A small quantity of Florence root still in the growers' hands is offered at enormous prices. The syndicate itself is holding its stocks, and apparently declines for the present to sell. Representatives of a large perfume manufactory of Grasse recently endeavoured to obtain a small quantity, but without success, and there are now perhaps not fifty tons in the whole of Leghorn.

Jottings on Pines.—In order to provide plants to give a succession of fruit from next December onwards some of the more promising suckers will have to be started at the beginning of March, therefore attention must be given to the preparation of soil. A fermenting bed should also be provided in some close structure to generate and maintain a bottom heat of 85° to 90° near the surface, and with means of maintaining a temperature of 55° to 65° with regularity. Plants selected at the beginning of last December, and started by an advanced temperature and an increase of moisture, will now be showing fruit. As it is advisable to accelerate the ripening of the fruit of these plants as much as possible, the temperature may be maintained at 65° to 70° at night, and 75° to 80° in the daytime under favourable circumstances, ventilating at 80°, allowing an advance to 85°, closing at about that temperature, utilising the sun heat as much as possible. The plants will require more water at the roots, examining the whole stock once a week. Supply water—always with about 1 oz. of Peruvian guano ammoniated, or some other complete fertiliser, dissolved in each gallon—only when needed, and then a thorough supply at the same temperature as that of the bed. Recently started plants to follow those already named should have a night temperature of 65°, and 75° by day from fire heat, which will be sufficient for them for some time longer.—PRACTICE.

Satyriums coriifolium and odorum.—In the Orchid houses at Kew two large groups are made up of good examples of these species. The former is the more showy of the two and the best known, having been in cultivation about eighty years. It is a S. African plant, and said to be one of the most common Orchids in Cape Colony, especially in the neighbourhood of Cape Town. At Kew it makes a number of large, fleshy, green leaves, mottled at the base with reddish-purple, and throws up a flower spike 15 inches high surmounted with deep yellow spurred blossoms destitute of the reddish markings usually associated with the flowers of this plant. At various times a number of coloured figures of this species have been produced, a very good one being given in Sweet's "British Flower Garden," iv., page 3; at t. 7289 in the "Botanical Magazine" a fine variety called *S. c. maculatum* is figured. This has the flowers plentifully sprinkled with red dots. The second species, *S. odorum*, is not so showy as the first, but makes a taller plant, and bears very sweetly scented flowers. It also is S. African. It makes a number of pale green radical leaves a foot or more long and 3 inches wide; on the flower stem a number of similar leaves are borne, which clasp the stem in a peculiar manner, forming a cup between the union on the stem and the expansion of the blade. The spike is from 15 to 18 inches high, crowned with a head of greenish-yellow flowers about the same size as those of the Himalayan species *S. nepalensis*. Altogether there are about a score specimens in flower, making quite a distinct feature in the house. They are grown in well-drained pans in a mixture of peat, loam, sphagnum, and sand. Until the spikes were well advanced an intermediate temperature was given.—W. D.

Apple Diamond Jubilee.

At the meeting of the Royal Horticultural Society, held on February 26th, in the Drill Hall, Westminster, the Fruit Committee recommended an award of merit to the large-sized culinary Apple, of which our illustration gives a fair impression. As will be noticed, the eye is open, and set in a large regular basin, bearing a marked resemblance, as we have already noted, to the well-known Alfriston. Diamond Jubilee has a flattened base and short fleshy stalk, inserted obliquely. The fruits shown at the Drill Hall were not much coloured, being mostly green or greenish-yellow, with a little red on the sun-exposed side. The variety is described as bearing well, and being of free growth. This Apple was exhibited by Mr. A. J. Thomas, fruit grower, Rodmersham, Sittingbourne, Kent.

Apple and Pear Culture.

THE cultivation of Apples and Pears is one of increasing importance, as was recently stated by Mr. Crump of Madresfield Court, before the Kidderminster Gardeners' Society. In the second part of his subject, Mr. Crump spoke of orchard planting, remarking that the many dreadfully neglected orchards to be seen in the county would not help them very much commercially. Farmers seemed to be well-nigh incorrigible in that respect. They would insist upon planting orchards on turf or with crops, losing sight that the grass sucked most of the goodness out of the land, and consequently left the trees to die of starvation. The Duke of Bedford had recently been making some extensive experiments on that question, and it was shown that young trees planted on open land made fifteen times more growth than when planted on grass. The surface of the ground ought to be kept quite clear, or the fruit crop was sure to be compromised. Bush trees should be planted in the autumn, and cut fairly well back in March. Root-lifting was not necessary with standard trees; and, personally, he would plant all bush trees. If he could afford to make the experiment he would plant 400 bush trees on an acre of land, and he felt sure that the result would be most satisfactory. They ought to pay more attention to that question, seeing the large sums which were paid for foreign supplies. He saw from the Board of Trade returns that last July English dealers paid to foreign growers £7000 for Strawberries, and £65,000 for Currants; in August, £39,000 for Apples; September, £70,000 for Apples and £85,000 for Pears; October, £190,000 for Apples and £48,000 for Pears; and in November £300,000 for Apples, and all in a year when it was said fruit had been a glut on the market. That meant that quite £500,000 had been sent to foreign growers for Apples and Pears in one half-year.

English growers must try and improve the quality of the Apples and Pears grown. They were greatly handicapped in the matter of distribution. The remedy was not easy to find, but he believed it would be found in the principle of co-operation. They could not trust the English grower to grade his fruit, for he was guilty of placing the large fruit on the top. Foreigners paid much attention to the question of grading, and in a barrel of Apples they would find the fruit uniform in size; each Apple was the counterpart of the other. Fruit-growers ought to send their products to one centre, where it could be properly graded and distributed. That could only be done on co-operative lines. If retailers could rely upon getting good fruit properly graded and sent on short notice from such a centre he felt sure that the scheme would be a success. In that way they would be able to deal with the question of railway rates, for such a central body could insist upon terms as favourable as were given to the foreigners. During the glut of last year he did not believe that the consumers had obtained fruit any cheaper than in former years. Growers had wasted it and retailers had kept up the prices. Mr. Crump gave information as to the value of certain manures, and spoke of the

best ways of dealing with the winter moth and other insect pests. Lane's Prince Albert was the most successful fruit-bearing Apple tree, and Cox's Orange Pippin was a splendid dessert fruit for cottagers' use. Among the Apples almost exclusively grown in Worcestershire were the Carnation Rose and the Sack Apple. The fruit might be kept in barrels like Potatoes, but that was done at the expense of the flavour. The best method was to use cellars where a uniform temperature could be obtained.

Seasonable Work in Plant Houses.

(Concluded from page 152.)

FIRM potting may, as a rule, be considered absolutely essential to success in plant growing; but how elastic the term is, and the varying conditions under which a greater or lesser degree of firmness are beneficial, are important factors which the plant grower must study and act upon. In the culture of plants which are grown principally for the beauty of their foliage, and when the aim is to get that foliage as large and strong as possible, a rough compost and the loosest form of potting practicable is usually the best. Let me take as examples such noble leaved plants as Alocasias and Marantas, which are rapid growers and need abundance of water.

If the compost is used in a very rough state, and the pots or pans well drained, only enough pressing is necessary to form the soil into a connected whole, so that the roots may pass from one part to another. The interstices are then quickly filled with fleshy roots, and the large quantities of water needed pass freely away. A close or firm soil for such plants would result in the decay of the young roots and unsatisfactory top growth. The same remarks apply to some extent to Caladiums, for although they are often grown in a rather close compost to get them in perfection with large highly coloured leaves, comparatively loose potting answers the best, as the immense quantities of water then necessary pass freely away, and rapid clean growth is the result. Gesneras, Tydas, and Achimenes may also be classed as plants which succeed the best when grown in loose open compost through which water and air pass freely, and although they are cultivated



APPLE DIAMOND JUBILEE.

principally for the beauty of their flowers, the production of strong growth is never detrimental to floriferousness, provided such growth receives the necessary exposure in regard to light and air.

Palms, Dracenas, and Crotons, on the other hand, although grown for the beauty of their foliage, are plants which need potting firmly. One reason for this is that the cultivator aims to produce as large and healthy a specimen as possible in a comparatively small pot, and it is only by packing the soil closely that this can be accomplished. When such plants are, however, planted in a border where there is plenty of room for the roots to ramble, quicker and more vigorous growth may be secured by making the soil less firm.

All plants which are cut back hard each year are usually best potted just when they are starting into growth. If the bulk of the old soil is then shaken away, the roots shortened, and fresh soil added, young roots are quickly sent out and satisfactory top growth is made. In the case of old plants of the various species and varieties of Adiantums I prefer to pot just before the crowns begin to unfold their young fronds. Since I adopted that plan I have found the plants so treated make stronger fronds than when the usual plan of repotting when the young fronds were starting was practised. When young plants are potted on without being disturbed at the roots, potting may of course be done at any time.

Turning to plants grown in greenhouses or other cool structures firm potting may as a rule be termed the order of the day. Pelargoniums of all descriptions require potting extra firmly to secure short-jointed floriferous growths. Fuchsias of different varieties may with advantage be treated on different lines. Some grow very strongly and need very firm potting, others, such as Molesworth and

White Swan, succeed the best when a very light compost is used, and this pressed only moderately firmly. Large old plants, which have been cut back year after year, should not be potted so firmly as young ones of the same varieties. Another interesting point in connection with Fuchsias is worth recording. Good plants in 7 or 8-inch pots are often highly valued for decorative purposes, especially when they can be flowered early in the season.

The usual method of producing them is to reserve plants which were flowered in 5-inch pots the previous year; these, after being dried off during the winter, are pruned back closely in spring and restarted. In the case of many varieties of the Arabella type I find the best results are obtained by doing but little. The points of the shoots then start away strongly, the plants flower earlier than do closely pruned ones, and a little tying when the flower buds appear will form them into any required shape.

Never pot plants when the old ball of earth is dust dry; always leave ample room for holding water, and exercise great care in watering till roots have permeated the fresh compost. These are details which have long been recognised as essential to success. They are not less so now than in days of old.—H. D.

Royal Horticultural Society.

Scientific Committee, February 26th.

Present: Dr. M. T. Masters (in the chair); with Messrs. E. Im Thurn, Odell, Houston, Holmes, Worsley, Rendle, Chapman, Groom, Saunders, O'Brien, Drury, Dr. Müller, Rev. W. Wilks, Prof. Boulger, and Rev. G. Henslow, hon. sec.

Double Tulips.—Mr. Houston exhibited and commented upon an early double Tulip, pointing out that the filaments of the stamens became petals (as in the Water Lily), and that from his experience a dry poor soil appeared to be conducive to the process of doubling. Stock seed, for instance, gave 90 per cent. of doubles under those conditions. On the other hand, Mr. Wilks observed that Papaver Rhæas became double in a rich garden border, but rarely, if ever, so in the wild state. Prof. Boulger remarked that he had found Ranunculus acris and Geum rivale double in moist places; Cardamine pratensis has also occurred double in similar situations. Mr. Douglas' experience was that Carnations raised in pots gave many more doubles than when in the open border, only 10 to 12 per cent. being single. This would seem to agree with Mr. Houston's experience. Mr. Henslow drew attention to the fact that it was long ago asserted by Mr. William Masters that a suspension of vitality must take place before a flower is formed, whether single or double; that mere vegetative vigour is not the cause of doubling, but that when once the doubling has been developed and, as Mr. Masters said, "is constitutional or in the blood," then abundant food will favour the development of double flowers. Mr. Masters gives the following instance in the case of Balsams:—"One year we did not pot off from the seed pots for many weeks after they were ready. They were, in fact, starved before being transplanted, and only produced single flowers. I treated them liberally, and they then bore flowers as double as could be wished." Mr. G. Duffield some years ago produced double Lapagerias, and remarked that both a white and a red-flowering plant, growing side by side, bore double flowers in the same year, and remarked that it seemed curious, as the plants were by no means remarkable for vigour. This, however, was apparently the cause. Mr. Laxton has also observed with regard to double Peas:—"I am of opinion that a check during the growth of the plant, either from drought, frost, or even injury to the stem, may produce it. Hitherto all the double-flowered forms have been produced later in the season, just as late or second blossoms of Apples and Pears are frequently semi-double, while the early flowers of Zonal Pelargoniums have often from six to ten petals." From Goebel's observations double-flowered Stocks can be raised from seed of single-flowered, up to 90 per cent., if the smaller and abnormally formed seeds are selected. Other testimony of a similar kind might be quoted in corroboration.

Diseased growth of Yews.—Mr. J. W. Odell exhibited specimens, and observed that Yew trees in his district (N.-W. Middlesex) are very much disfigured by the formation of cone-like galls. These are due to the gall fly *Cecidomya taxi* (Inchbald). The specimens were from several trees. On the young trees the gall seems to be more persistent than on the older trees. On the former the leaves forming the cones appear to recurve after the pupæ escape, assuming a rosette appearance, and beyond the arresting of the growth of the shoots affected no great harm seems to be done. On the older trees the cones and rosettes drop off rather freely, and this often gives a shabby look to the tree as the shoots die back and decay. Dr. Masters observed that these galls are commoner upon the golden-leaved varieties of Yew.

Crested Ferns, &c.—Mr. C. E. Drury exhibited the following specimens:—1, Fronds of *Phegopteris hexagonoptera truncata*, found by Mr. Maxon (Smithsonian Institute) on the banks of the Potomac in 1900. Living plants are in the exhibitor's possession. All the terminals are abruptly truncated with excurrent midribs like slender thorns. 2, Fronds of a partially bipinnate form of *Nephrolepis*

exaltata, from Mr. Roupell. Many of the central pinnæ are much elongated and thoroughly bipinnate, resembling small fronds. These fronds were taken about three years ago, but Mr. Roupell states that the plant has since resumed its normal pinnate type. Sowing the spores was suggested with a view to obtaining a decomposed strain of this species. 3, Fronds of three distinct varieties of three distinct species, found growing together in one clump in a wood near St. Austell, Cornwall, by Mr. Williams. They represent:—(a) A small crested form of *Lastrea pseudo-mas*, and it is worthy of remark, that the well-known *L. p.-m. cristata* (king of male Ferns) was found in same locality; (b) a polydactylous foliose form of *Polystichum angulare* of very distinct type from the normal, but imperfectly polydactylous; (c) an extremely fine bipinnate form of *Polypodium vulgare*, with basal pinnules over 2 inches long and deeply cut throughout. Mr. Williams stated that the remaining fronds were very much larger but damaged, which indicates a very abnormal size, as well as development. Such an association of varieties is certainly quite unique so far as any record is concerned, and as all three are redundant, the conditions of growth must be peculiarly favourable, which may have induced the "sports." The *P. vulgare* is quite distinct from previous finds; the other two have been closely paralleled. *Pteris aquilina cristata*, found by Mr. C. B. Green, Acton, at Faygate, Sussex. Some acres of this form exist near the railway station (half a mile) intermingled with about 50 per cent. of normal fronds.

Rhamnus, sp.—Mr. E. M. Holmes exhibited a specimen of *Rhamnus californica*, showing that the leaves in this species are evergreen, whilst the nearly allied species, *R. Purshiana*, loses its leaves in the autumn, the majority of the species of this genus being deciduous. The bark of both species is collected, and is known in commerce as "cascara sagrada." Attention was also directed to the fact that the bark, met with in commerce under the name of *Salix nigra*, does not possess the appearance of the bark of that species, of which the young twigs are black and polished, and have at first a waxy bloom on them. The bark of commerce more nearly resembles that of *Salix alba*. Mr. Holmes also brought seeds (stones) of *Prunus nepalensis*, which he had received from Dr. Geo. Watt, C.I.E. (reporter on economic products to the Indian Government), as worthy of cultivation in this country, the fruit having a pleasant acid taste, and being used as a fruit in Nepal.

Crocus, sp. and vars.—Mr. E. A. Bowles exhibited the following interesting series of Croci. The type forms and albino varieties of *C. reticulatus*, pure white, except for a line or two of greyish blue at the base of the segments and extending down the perianth tube. (For some years I could not identify this variety with certainty, until one bulb in 1899 reverted to a striped form identical with the *C. retic. v. albicans* of Herbert, figured in "Bot. Reg.," vol. xxxiii., 16 (17), fig. 2). 2, *C. Imperati*.—Pure white internally, externally pale buff, almost white, and richly feathered with deep purple on the outer segments. The seedlings raised from this form produce the typical *Imperati*, with diphyllous, proper spathe. 3, *versicolor*.—A form often confounded with *Imperati* and known as *Imp. v. albidus*. The inner segments distinctly show the feathering so characteristic of *versicolor*, the form of Maw's, plate xvi., fig. 1, d. I have wild forms, collected near Mentone, which very nearly approach this, and like this, have a ligulate inner proper spathe. 4, *C. biflorus v. Weldenii*.—A pure white form, sold as *Weldenii v. niveus* and *dalmaticus niveus*. *C. candidus*.—Typical forms, white grained with blue externally, and the new yellow variety, clear orange grained externally with purple. A very floriferous and beautiful form. *C. cyprius*.—A small blue species with rich purple bases to the segments on the outer surfaces. The only species that has scarlet filaments. It, unfortunately, appears to have a delicate constitution in cultivation. *C. corsicus*.—Proper spathe monophyllous. *C. minimus*.—Proper spathe diphyllous; both natives of Corsica, the former in mountainous regions, the latter in lower ground. *C. reticulatus v. micranthus*.—A small-flowered form, much deeper lilac internally. 5, Seedling varieties of *Crocus chrysanthus*, approaching most nearly to the *v. coerulescens*. It is the first year of flowering, and this perhaps accounts for the small blossoms. Two of these, internally, pure white with a bright orange throat; the outer surface of the outer segments are suffused with a rich crimson purple with the exception of a narrow marginal band of a pale cream colour. The other has the outer segments sulphur yellow, slightly paler on the inner surface, and grained with dull purple down the centre on the outer surface. The black spot at the base of the barbs of the anthers, so characteristic of *C. chrysanthus*, is present in this form and one of the former, but absent in the third specimen.

Turnip budding from root.—Mr. Wilks exhibited a root with two or three tufts of shoots springing from apparently the true root. It is not a very uncommon occurrence, and was probably due to some check from local injury, &c.

Phalænopsis weevil.—Mr. Chapman brought specimens of this insect. The only remedy that could be suggested was a careful search for them at night.

Epidendrum longicolle.—Mr. O'Brien exhibited flowers in a malformed state. Dr. Masters undertook to examine and report upon them.

Prunus tuberculata.—Dr. Masters exhibited a branch with cones of this W. American Pine. It is one of the species the cones of which remain for some years upon the tree, and only shed their seeds after a forest fire.

Winter Aconite germinating.—Mr. Henslow showed specimens to illustrate the apparently abnormal fact of the tuber being first formed on the slender tap root, and not on the radicle.

Scabious bracts virescent.—He also exhibited specimens in which the florets were suppressed, but the bracteoles had become elongated and sub-foliaceous. It was comparable with the green Dahlia, wheat-eared Carnation, &c.

Societies.

Liverpool Horticultural Association.

ON Saturday evening the committee made arrangements to have their meeting at the Royal Institution, Colquitt Street. Mr. Ker gave a sketch of the history of the Sweet Pea. He spoke of its introduction from Sicily, the earlier growers and localities, the mode of crossing and intercrossing, and the vagaries for which it is so noted, down the long list of years to the bicentenary last year. Groups were exhibited on the sheet, and the work of the Bicentenary Committee was highly eulogised, tributes being paid to the names of Eckford in England, and the Rev. Mr. Hutchins in America. The second part was gone into, and the great exhibition at St. Petersburg fully described. The opening ceremony was performed in great style, and the Russians, Mr. Ker said, were really clever. Such Rose bushes he had never seen, from 2 to 5 feet in diameter and perfectly grown; Lily of the Valley, Cyclamen, Lilacs, hardy shrubs and plants, herbaceous plants, the feature being the lovely Phlox canadense grown in pans and superb table decorations exhibited by thirty-five nurserymen. The country and people were admirably depicted throughout by some hundreds of slides.—R. P. R.

Hessle Gardeners' Mutual Improvement Society.

THIS society held its usual fortnightly meeting last week. Mr. Blair occupied the chair, and Mr. Leadbetter of Tranby Croft Gardens read a paper on "Celery: its Culture and Variety," with a treatise on the Celery fly. This proved very interesting, and the discussion of it was very animated. On February 28th the society held its ninth annual dinner, which was exceptionally successful. Over sixty members and friends sat down to a splendid repast provided by host Raynor of the Admiral Hawke Hotel, Hessle. Sergeant E. K. Hughes, E.Y.V., Hessle, presided. After the usual loyal toasts, the toast of "Our Journal" was proposed by Mr. Picker, Hesslewood Gardens, and supported by Mr. Leadbetter. This was responded to by Mr. J. Donoghue. The secretary's report was very favourable, there being a balance in hand of over £10. Complimentary reference was made to the lectures delivered by Mr. Gaut from the Yorkshire College, Leeds, and the committee are recommended to make an early application to the same lecturer for the coming season. The continued success of the society is mainly due to the efforts of the committee and the energetic services of the secretaries, Messrs. Coult and Veress.—J. F. D.

Berkshire, Reading, and District Auxiliary of the Gardeners' Royal Benevolent Institution.

THE first annual meeting in connection with the above auxiliary, which was held on Friday evening last in the Gardeners' Club Room, Old Abbey Restaurant, Reading, proved a very successful one. The president, Mr. C. E. Keyser, occupied the chair, and was supported by the treasurer, Mr. Arthur W. Sutton, Mr. Martin E. F. Sutton, and by Mr. Harry Veitch (treasurer of the parent society), Mr. Owen Thomas, of the Royal Gardens, Frogmore, and Mr. G. J. Ingram (secretary), as a deputation from the London committee. There were also present many of the leading gardeners in the neighbourhood. After the annual report and balance-sheet had been read and adopted, Mr. Veitch congratulated the members on the great success that had attended their efforts during the past sixteen months, enabling them to raise since the formation of the auxiliary over £130, and in hopeful terms spoke of the bright future there appeared to be in store for the Reading branch. The election of officers was proceeded with, and Mr. C. E. Keyser was unanimously re-elected president for the second year, with Mr. A. W. Sutton as hon. treasurer, and Mr. H. G. Cox hon. secretary. With the exception of three or four members, who had left the district, the committee were re-elected with the addition of Messrs. Barnes, Macdonald, Nichols, E. S. Pigg, Harris, Tubb, Hatton, and Gibson.

REPORT AND BALANCE-SHEET, SEPT. 1ST, 1899—DEC. 31ST, 1900.

The committee, in presenting their first report, mention that it is but sixteen months since the branch was inaugurated—namely, on May 16th, 1899. The balance-sheet shows how successful has been the work of the auxiliary: and we can only hope that other branches will spring up.

Donations and subscriptions to auxiliary . . .	£47 12 6½	Remitted to parent society	£103 19 0
Life members' contributions	47 5 0	Printing and stationery	5 3 9
Subscriptions to parent society	40 19 0	Postages (per sec.)	2 11 3½
		" (per W. Pope)	0 9 5
		Cheque books	0 2 0
		Balance at bank, December 31st, 1900	23 11 1
	£135 16 6½		£135 16 6½



Hardy Fruit Garden.

Filberts and Cob Nuts.—*Planting.*—Where strong suckers can be obtained from fruiting bushes these can be planted now, first giving the ground on which they are to be cultivated the needful preparation. Moderately rich and friable loam will need nothing further than deep digging. Poor sandy or light soil will also require deep cultivation as well as enriching with decayed manure. Loam resting on chalk or sandstone is suitable, ample drainage being provided by a substratum of this character. A wet and badly drained position, whatever the character and texture of the soil, will only produce unfruitful trees or bushes. The situation must be open, but sheltered from the most boisterous winds, though fully exposed to sunshine and abundant air. The preparation of the soil ought to be completed at once, the ground firmed when dry, and the suckers planted.

The best suckers are those 2 to 3 feet in height, with several well placed stems, which may be shortened to half their length after planting. They should also be furnished with an ample supply of fibrous roots. In planting take out the holes 10 feet apart, shallow in depth, but wide, so as to admit the roots readily. The strongest roots, which may be torn or injured in lifting, should be pruned smoothly. Lay them out to their full length, and spread carefully over them some light prepared compost in such manner as not to turn the ends of the roots in a contrary or upward direction. When finished mulch the surface with manure. The following season shorten the shoots to 18 inches, or if more main growths to form permanent branches are required closer pruning must be resorted to, so that vigorous shoots may push which can be utilised for this purpose. It will be necessary to make a selection of these growths and train them in a formal manner on the outside of a wooden hoop, thus forming a basin-like framework, the centre always being open and free from growths. A good bush may be formed with twelve main branches. Encourage them to extend until of sufficient length, and pinch side shoots to five leaves.

Pruning Established Bushes.—Established Nut bushes must have the leading growths shortened closely after the bushes have extended to the height desirable. The side shoots are dealt with in various ways after the flowering period is over. The growths bearing catkins or staminate flowers must be left at full length until the pollen has been shed, then cut closely back. The shoots with blossom buds leave entire—that is, the small pink pistillate blooms which when fully open are ready to receive pollen from the catkins. Shoots bearing neither pistillate nor staminate flowers are not required, and should be shortened back or removed if crowded, likewise all bearing shoots. Sappy shoots which tend to grow vigorously remove entirely, and keep spurs from becoming elongated by judicious annual shortening. Old or weakened main growths should be replaced by new growths from the base of the bush.

Blackberry Culture.—The strong growing garden forms are on strong soils of a rich character very prolific. Comparatively young canes with abundant fibrous roots may be planted now with good results as to growth, but not as regards fruit this season. Trench the soil two or three spits, working in a fair quantity of decomposed manure. Plant the canes 5 feet apart in the rows, the latter being 8 feet asunder. The canes produced each season are of considerable length, and must be trained in a horizontal form, either to a trellis, stakes, or stakes and wire. Stout stakes 6 feet long, and placed 2½ feet apart in the rows, are the best and simplest, but wire stretched between stout uprights at each end of row may be adopted. A limited number of canes only should be reserved to each stool, four or five being sufficient, cutting out the weakest. Soon after planting cut down the canes closely to the soil.

Raspberries.—New plantations of Raspberries may be formed with slender canes which are furnished with abundant roots of a fibrous character. Prepare the soil deeply and manure liberally, Raspberries being gross feeders. Plant the canes in groups of three. These groups should be arranged 3 feet apart in the rows, the latter 5 feet asunder. Cut closely down after planting, or at least to within 9 inches of the soil. If preferred plant in a continuous line, arranging the canes 18 inches apart, and train to wires stretched to uprights 5 feet high. Mulch after planting, and expect no fruit the first season. Prune out old canes in established plantations, and select for retaining the strongest of the new ones, shortening them to 5 feet. Mulch round the roots thickly with manure.

Deferred Pruning.—Fruit trees of any kind which through weather or other circumstances have not received the necessary pruning should have this attended to without delay. Crowded trees and bushes will receive benefit from thinning out. Rank Gooseberry bushes should be freely thinned in the centre, crossing and intercrossing branches removed, and older branches replaced by younger if the former are deteriorating. The growths are pushing now, so any dead shoots can be readily seen. Shorten the shoots of newly planted Gooseberries and

Currants to one-third their length, this being necessary in order to secure a greater number of branches, and produce good habited bushes.

Fruit Forcing.

Cherry House.—Ventilation is all-important in forcing Cherries, and requires unremitting attention. A free circulation of air should pass through the house whenever the temperature exceeds 50°, regulating the amount by the conditions of the external atmosphere. Employ fire heat only to maintain 50° through the day, relying on sun heat for advancement, and maintain a night temperature of 40° to 45°. The blossoming over and the fruit swelling, recourse may again be had to syringing, but avoid keeping the trees dripping with water, always allowing the foliage to become dry before night. Keep a keen eye on aphids, and promptly fumigate or syringe the trees with quassia water. Affected shoots should be gently rubbed between the fingers, well moistened with the preparation, so as to dislodge the pests on the under side of the leaves, then apply the liquid at a temperature of about 100° by means of a spraying apparatus, which insures better distribution, and 1 gallon will go as far as by ordinary syringing. Look carefully over the trees for grubs. Supply water or liquid manure to the border as required, keeping trees in pots well supplied, and apply top-dressings of rich material. Pinch the side growths at the fourth or fifth leaf, heeling-in extension or side growths required to cover vacant space.

Peaches and Nectarines.—*Earliest House.*—A night temperature of 50° to 55°, and 60° to 65° by day, with 10° to 15° more from sun heat, especially after closing, will keep the trees in steady growth and the fruit freely swelling. Ventilate from 60°, increasing with sun heat, taking care to avoid cold draughts and sudden depressions of temperature, especially after fluctuations, as such cripple the foliage, and may cause the fruit to fall. Syringe in the morning and afternoon with water at the same temperature as the house, and always sufficiently early in the afternoon to allow the foliage to become dry before night. On dull days omit the afternoon syringing, also the morning when cold and sunless, damping the paths and border instead. Disbud carefully and in accordance with the growth. Trees that have set heavy crops should have the least promising fruits removed. To help weakly trees liquid manure may be supplied whenever watering is necessary, taking care not to apply it too strong and only when required.

Second Early House.—Trees started at the new year have set the fruit well, a light syringing occasionally after this is effected assisting the trees to cast off the remains of the petals. Syringe, however, cautiously in dull weather, as it weakens the growth, yet encourages it at the expense of the fruit. Disbud gradually and carefully, not being in a hurry about this, but practising it daily when the fruit is swelling, removing a few growths here and there so as not to give a check to any part, but secure an even balance of vigour. Where there is a thick set of fruit remove the smallest and worst placed by degrees. A night temperature of 50° is safe in severe weather, and 55° by day, 5° more in mild weather, with 5° to 10° rise from sun heat.

Trees Started in February.—The flowers are expanded, and should be fertilised carefully day by day with a soft brush or other contrivance when the pollen is ripe. Shaking the trees answers well in most cases, it being done in the early part of the day, and again about noon. Turn the heat on in the morning to secure and keep a temperature of 50° by day, ventilating from 55°, allowing an advance to 60° or 65°, with a free circulation of air, employing fire heat only at night to keep the temperature between 40° and 45°.

Houses to Afford Fruit in Late July and Early August.—The trees and structures usually started about this time are advanced for flowering, the anthers showing clear of the corollas, therefore syringing should cease, maintaining a genial atmosphere by damping the paths in the morning and early afternoon. A temperature of 50° by day, and ventilation from that point, leaving it full at 65°, will meet their requirements, 40° to 45° being ample at night. If the border is at all dry afford a thorough supply of water, repeating as necessary, but avoid making the soil sodden. Where the blossom buds are superabundant remove those on the under side or at the back of the trellis, drawing the hand the reverse way of the growths.

Latest Houses.—The chief consideration in these is to retard the blossoming as much as possible, therefore admit air to the fullest extent, as the already swelling and developing buds will not take any harm from frost until the flowers show colour, and even then there is safety in just excluding frost. Any pruning or arranging of the trees on the trellises should be completed forthwith, supplying water to the border to insure thorough moisture, and keeping as cool as possible.

Cucumbers.—Light and sun heat increase the evaporation, necessitating a greater supply of atmospheric moisture, therefore damp the house twice a day, and syringe the plants lightly on fine afternoons. On cold nights 65° is ample, but on mild nights allow 5° more, maintaining 70° to 75° by day, and 80° to 90° from sun heat, closing early so as to continue or increase to 90° or even 100°. Afford liquid manure once or twice a week, with an occasional application of nitrate of soda, $\frac{1}{2}$ oz. to a gallon of water, and prepared overnight. This puts vigour into the plants and both size and colour into the fruits. Stop the shoots one joint beyond the stem for fruit. Thin the Cucumbers well to secure fine specimens, removing superfluous growth, tendrils, bad leaves, and male blossoms. Ventilate early and carefully, avoiding draughts and depressions of temperature.



* All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Pyramid Apple Trees (B. W. S.).—The trees should not be cut-in quite so closely as last season; close pruning in winter invariably produces an abundance of unfruitful young shoots. Were you to shorten the branches closely again you would aggravate the evil you wish to avoid. Prune the trees at once into the pyramid form. On some of them the young wood will be more thickly placed than it is on others; the shoots nearest the base of these should be cut back to two-thirds of their length, gradually cutting-in closer as you near the apex of the tree so as to insure the desired shape. The trees that have fewer branches should be cut rather more closely. We also advise you to practise summer pruning, which is the best method of inducing fruitfulness.

Treatment of Cut-back Vines (S. E.).—For fruiting in pots next season these Vines should now be fit for shaking out and repotting, or if that has already been done and the roots have reached the sides of the pots they will need shifting into the fruiting—12-inch—pots. If they have been given bottom heat they should be returned to it for a time, 75° to 80° being sufficient, otherwise bottom heat is not necessary, yet the pots are better stood on slates over hot-water pipes than on a cool bottom. Keep the house close and moderately moist until they become established. Train the canes near the glass, pinching the laterals to one leaf, and thus secure solidified growth and plump buds. Use clean pots, and efficient drainage. Turfy loam with a fifth of old mortar rubbish answers well for potting, but a quart of steamed bone-meal and soot, and double the quantity of wood ashes, may be mixed with every bushel of loam.

Cranberry Cuttings (E. O. F.).—Though the common Cranberry (*Oxycoccus palustris*) grows somewhat plentifully in certain peaty and wet districts in the northern parts of Britain, we are not in a position to say where you may procure cuttings, as the proprietors are usually averse to wild plants being tampered with, and only admit of their being taken by leave. Perhaps cuttings may be procured through the principal nurserymen who have business connection with proprietors where the common Cranberry grows, and would arrange for a supply at a price agreed upon. Cuttings, however, require to be inserted under a handglass, and shaded until established. The long creeping shoots with roots are sometimes called cuttings, and these may be planted where they are to remain. The large fruited or American Cranberry (*O. macrocarps*) is usually kept in stock by nurserymen, the fruit being much larger. The plants should be put out early in autumn or in spring, 2 feet apart every way, and in favourable circumstances soon spread and cover the ground. It is likely the Cranberries will succeed in the situation you mention, but the plants must have plenty of light.

Browallia elata (W. B.).—This plant is a useful one, as it may be had in flower all the year by sowing a pinch of seed in February and again early in August; but it is as a winter and spring-flowering plant that it is most deserving of culture. The blue Phlox-like flowers, which proceed freely from the tops of the side shoots, contrast effectively when associated with flowering plants of light and bright shades of colour. A stock of this beautiful and very easily managed plant can readily be raised from seed sown in 4-inch pots previously crocked and filled to the rim with a light compost consisting of three parts of sandy loam and one of leaf mould. Cover the seeds lightly with some fine soil, then put the pots in heat and cover them with a square or two of glass and a little moss, which must be removed as soon as the seedlings appear through the soil. From this time the seedlings should be gradually inured to light and air to prevent them from making a weakly growth, and with this object in view the plants should be grown on shelves near the glass. A board resting on a few flower pots on bricks in an early Melon or Cucumber frame would be a suitable place in which to grow the plants in the earlier stages. Three plants in a pot will be sufficient. Place a stick about 18 inches long to each plant for support, and keep well supplied with water at the roots, and sprinkled with tepid water on bright mornings and afternoons, as much with a view to promoting a healthy growth in the plants as to prevent the attacks of red spider. If larger plants are desired a portion of the stock should be shifted into 6 or 8-inch pots; and those in the 4-inch pots should be top-dressed with a mixture of pulverised horse droppings and loam when the plants attain a height of 10 or 12 inches.

Descent of Cambium or other Substance to Roots of Raspberries (*Irish Fruit Grower*).—1, There may be some descent of assimilated matter through the old bearing canes to the roots after the fruit is gathered, and if so this is more likely to be transferred to the young canes than to be stored in the roots, if, indeed, any be stored there for transmission or diffusion in the ensuing season. It is a moot question if anything of the kind occurs, and certainly there is no particular storage of matter, for the obvious reason that the roots do not thicken disproportionately, the substance not being more abundant there than in other well ripened portions of the canes. 2, There is no other advantage gained by cutting out the old canes than that of leaving more room for sun and air to get at those left to bear fruit the following year. This is of the greatest importance, as on their maturation depends the crop of the following season, for the stronger they are the most perfected in bud, and in ripening of the canes, the better they will bear. Such is our experience, the thing being to get stored matter into them, and that they effect most fully when given greatest advantages of elaborating the elements derived from both the atmosphere and soil. Indeed, the bearing canes are a great stress on the energies of the plant, hence young Raspberries are cut hard back in order to secure vigorous canes for bearing another season.

Cypripediums in February (*J. H. B.*).—Such species as *C. villosum* and *C. venustum* will be benefited by removal to a temperature of 45° or 50° while in bloom. They grow afterwards with increased vigour, for they will rest thoroughly under such treatment. Although these plants have no pseudo-bulbs and cannot be kept so dry during their resting season as many Orchids, they nevertheless must have a period of rest, which can only be induced by a lower temperature and slightly drier conditions. While in a cool house little water should be given, and when this becomes necessary that supplied to them must be several degrees warmer than the house. The plants of *C. insigne*, so useful for various forms of decoration, that have flowered may be top-dressed with peat and sphagnum moss, removing as much of the old material as possible. If the plants are much root-bound a little cow manure in a moderately dry state may with advantage be applied to the surface. Any plants that it may be deemed advisable to repot should have the pans or pots broken in which they are growing, and any portions to which the roots cling firmly must be left attached. The whole of the old compost should be carefully washed with tepid water from amongst their roots. Allow them to drain thoroughly, and then repot them in the same or larger pans. The pots may be at the least one-third full of drainage, and the compost—peat and charcoal—in good-sized lumps should be carefully worked amongst the roots. Sphagnum moss may also be used, but this must be worked in near the surface, for it becomes thoroughly decomposed in one season, and can then be easily removed. These plants will do in a vinery or Peach house. They will repay for gentle moist heat to start them, and during their season of growth.

Names of Plants (*J. McC.*).—1, *Spiraea cantoniensis*; 2, *Pernettya mucronata*; 3, *Ilex aquifolium* var. *near myrtifolium*; 4, *Pyrus japonica*; 5, *Cestrum roseum*; 6, impossible to name from such a scrap.

Next Week's Events.

Monday, March 11th.—United Horticultural Benevolent and Provident Society's annual meeting at Caledonian Hotel.

Tuesday, March 12th.—Royal Horticultural Society's Committees, in the Drill Hall, Buckingham Gate, S.W.

Trade Catalogues Received.

M. Campbell & Son, Auchinraith Nurseries, High Blantyre, N.B.—*New and Select Florists' Flowers and General Nursery Stock.*

Richard Dean, Ranelagh Road, Ealing, W.—*A Handbook of Delightful Specialities in Plants, and Choice Vegetable and Flower Seeds.*

Dicksons, Limited, Seed Growers, Nurserymen, &c., Chester.—*Select Farm Seeds.*

E. P. Dixon & Sons, Seed Merchants, Hull.—*Farm Seed List for 1901.*

Hogg & Robertson, The Queen's Seedsmen, 22, Mary Street, Dublin.—*Robertson's Book of the Farm.* Pages 33 to 36 are of special interest to all agriculturists.

Kent & Brydon, Seed Merchants and Nurserymen, Darlington.—*Farm Seeds.*

Little & Ballantyne, The Royal Seed Establishment, Carlisle.—*Farm Seeds.*

H. Shoesmith, Westfield, Woking.—*Chrysanthemums, Dahlias, and Carnations.*

Toogood & Sons, The Royal Seedsmen, Southampton.—*Farm Seeds for 1901.*

Louis Van Houtte, père, Ghent, Belgium.—*Begonias, Gesneraceous Plants, Palms, &c.*

Covent Garden Market.—March 6th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, cooking, bush...	2	6 to 7	Oranges, case ...	6	0 to 15
„ Californian, case	7	6 9 6	Pears, crate ...	3	0 7 0
Apricots, Cape, box ...	8	0 10 0	„ stewing, case of		
Cobnuts, doz. lb., best ...	4	0 5 0	72 to 120 ...	4	6 6 6
Grapes, black ...	0	6 2 6	„ Californian, case	15	0 18 0
„ Dutch, lb. ...	0	6 1 0	„ ½ case ...	9	0 14 0
„ white, per lb. ...	1	6 5 0	Pines, St. Michael's, each	1	6 4 6
Lemons, case ...	9	0 16 0			

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	6 to 3 6	Greens, bush. ...	0	6 to 1 0
„ Jerusalem, sieve	1	6 0 0	Herbs, bunch ...	0	2 0 0
Asparagus (Spruce Grass)	0	6 0 8	Leeks, bunch ...	0	1 ½ 0 0
„ English, 100 ...	7	0 0 0	Lettuce, doz. French ...	0	8 1 4
„ Giant, bundle ...	15	0 20 0	Mushrooms, forced, lb. ...	0	8 0 9
„ Spanish, bundle ...	1	6 1 9	Mustard and Cress, pnt.	0	2 0 0
„ Paris Green ...	5	0 6 0	Onions, Dutch, bag ...	3	6 0 0
Batavia, doz ...	2	6 3 0	„ English, cwt. ...	5	0 0 0
Beans, French, per lb. ...	1	0 1 2	Parsley, doz. bnchs. ...	2	0 3 0
„ Jersey, per lb. ...	2	0 0 0	Potatoes, cwt. ...	3	0 7 0
Beet, red, doz. ...	0	6 0 0	Radishes, doz. ...	1	0 1 3
Broccoli, bush ...	0	6 1 0	Rhubarb, doz. ...	1	2 1 5
Brussels Sprouts, sieve ...	1	0 2 0	Savoys, tally ...	4	0 5 0
Cabbages, tally ...	3	0 5 0	Scotch Kale, per bushel ...	0	6 1 3
Carrots, doz. bnch. ...	2	0 3 0	Seakale, best, doz. ...	12	0 0 0
Cauliflowers, doz. ...	1	6 3 0	„ 2nd, doz. ...	6	0 8 0
Celery, bundle ...	1	0 1 9	Shallots, lb. ...	0	4 0 0
Chicory, Belgian, lb. ...	0	4 0 0	Spinach, bush. ...	4	0 5 0
Corn Salad, strike ...	1	0 1 3	Turnips, doz. ...	2	0 3 0
Cucumbers, doz. ...	4	0 6 0	Turnip tops ...	0	9 1 0
Endive, doz ...	1	3 2 0	Watercress, doz. ...	0	8 0 0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Asparagus, Fern, bunch	1	6 to 2 6	Maidenhair Fern, dozen		
Carnations, 12 blooms ...	2	0 3 0	bunches ...	4	0 to 8 0
Cattleyas, doz. ...	10	0 18 0	Mimosas, bnch. ...	1	0 1 6
Daffodils, doz. ...	6	0 9 0	Odontoglossums ...	4	0 8 0
Eucharis, doz. ...	4	0 6 0	Roses Tea, white, doz. ...	1	0 3 0
Gardenias, doz. ...	3	0 5 0	„ yellow, doz. (Perles)	2	0 4 0
Geranium, scarlet, doz.			„ red, doz. ...	6	0 10 0
bunches ...	8	0 12 0	„ Catherine Mermet,		
Hyacinths, doz. ...	4	0 8 0	doz. ...	6	0 12 0
Lilium lancifolium album	3	0 5 0	Smilax, bunch ...	3	0 5 0
„ rubrum	3	0 5 0	Tulips, yellow, doz. bnchs.	6	0 9 0
„ various ...	4	0 8 0	„ white „	8	0 10 0
Lilac, white, bunch, ...	3	0 5 0	„ red „	6	0 8 0
Lily of the Valley, 12 bun.	8	0 12 0			

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acers, doz. ...	12	0 to 24 0	Foliage plants, var., each	1	0 to 5 0
Arbor Vitæ, var., doz. ...	6	0 36 0	Geraniums, scarlet, doz.	6	0 10 0
Aspidistra, doz. ...	18	0 36 0	„ pink, doz. ...	8	0 10 0
Aspidistra, specimen ...	15	0 20 0	Hydrangeas, white, each	2	6 5 0
Azaleas, various, each ...	2	6 5 0	„ pink, doz. ...	12	0 15 6
Bononias, doz. ...	20	0 24 0	„ paniculata, each	1	0 3 0
Cannas, doz. ...	18	0 0 0	Lilium Harrisii, doz. ...	8	0 18 0
Crotons, doz. ...	18	0 30 0	Lycopodiums, doz. ...	3	0 6 0
Dracena, var., doz. ...	12	0 30 0	Marguerite Daisy, doz. ...	8	0 10 0
Dracena, viridis, doz. ...	9	0 18 0	Mignonette, doz. ...	8	0 12 0
Erica, various, doz. ...	8	0 18 0	Myrtles, doz. ...	6	0 9 0
Euonymus, var., doz. ...	6	0 18 0	Palms, in var., each ...	1	0 15 0
Evergreens, var., doz. ...	4	0 18 0	„ specimens ...	21	0 63 0
Ferns, var., doz. ...	4	0 18 0	Roses, doz. ...	6	0 18 0
„ small, 100 ...	4	0 8 0	Stocks, doz. ...	8	0 12 0
Ficus elastica, each ...	1	6 7 6			



Illustrious Farmers.

WHEN 1900 dawned we were in the throes of a great conflict, hearts were heavy, and homes all over the Empire were mourning loved ones. We thought never could darker days dawn, but we little knew what the future held in store. The beginning of this new century in its very first month will be a time to remember for many generations. We knew our beloved Queen was mortal, but she seemed so hale, she carried so well her weight of fourscore years, that we all trusted her valuable life might be spared to us at least a few more years. We have gone through no horrible time of suspense, we hardly realised the gracious lady was leaving us before the air re-echoed with

a thousand, nay, ten thousand passing bells. If ever creature deserved of its Creator's hands rest, she did. "Not slothful in business, fervent in spirit, serving the Lord." Yes, and for ever serving her people, whose best interests she had at heart.

She was such a queenly woman and such a womanly queen. It fairly makes you and me gasp to think of her multitudinous cares and interests, and to her the cares and the interest were so real. No monarch has been so deeply and truly mourned, and no monarch has ever left so bright an example. Kings and rulers must have their relaxations, and it is a happy thing for their people when these relaxations take bodily shape in some wholesome beneficent work. The dynasty of Hanover is at an end. Of those rulers, old Farmer George was the one who set the fashion of kingly agriculturists, and we have kindly thoughts of the old man. He little knew what an eminent agriculturist his granddaughter would become. Ah, yes! we trace here the spirit of that noble and good man the Prince Consort. Time has yet to show how much he did for the benefit of his adopted country.

In agriculture as in so many things he was head and shoulders above his compeers; would that he had been spared longer, he would have seen schemes that he advocated, lessons he inculcated, the practice of the day. He was before his age, but we who are here see how right he was and how true all his deductions were. Coming among us in 1840 he found the Royal Agricultural Society of England a year old, and almost immediately he became an honoured and useful member, and of the Smithfield Show also. These societies have made wonderful strides since then. As early as 1843 he began to exhibit stock at Smithfield, and we find that her Majesty visited that show in 1844, 1850, and 1860. We believe twice has the "Royal" held its gatherings under the shadow of the great castle of Windsor; the first occasion was in 1851, when such a happy family party visited it. It was the first appearance of the nine years old Prince of Wales with his brother and sisters. It was in 1854, when he was a lad of twelve, that he visited the Smithfield exhibition. But shows are the holiday outings; what work was going on? Practical work? A holding of 2000 acres is no light undertaking alone, but what is it when only an adjunct, as it were, to stately cares and the demands of the nation on the Prince's time and energies? Few people, we fancy, have any idea that at Windsor farming was on so extensive a scale. We believe now the land in hand is about 1000 acres. The best and the most scientific means were used to make the land profitable. The heavy Flemish farm was thoroughly well drained, and this at a time when the draining of land was not considered a burning question.

The Prince Consort founded the three pedigree herds at Windsor, Shorthorns, Herefords, and Devons; and he created model farms on the estate, which being equipped with admirable buildings, and in the midst of highly cultured land, still enables such large numbers of fat animals to be offered at the annual sales. Mr. T. C. Morton, writing of his Royal Highness in 1863, says: "He stood alone as the exemplar and exponent of a greater diversity of farm practice and experience than any other single agriculturist." This is indeed high testimony from one who knew of what he was writing.

There was the Windsor Dairy, too, planned and built by his Royal Highness, a temple dedicated to milky rites, perfect in itself and its appointments. From the love she bore her husband, and from a desire to see the work he loved still carried on, her Majesty has ever taken a lively interest in everything pertaining to her farms, both in the south and at her northern home. Many of us will remember the wonderful meeting of the "Royal" in the Great Park at Windsor when it held its Jubilee; what a gathering of the greatest agriculturists of the century were there, under the auspices of royalty. What a record of prizes there is! and her Majesty the Queen heads the list so often. We have only space to note the successes of the last two years. The royal Hereford steer of 1899 carried off the champion prizes at Norwich, Birmingham, and Smithfield, sweeping the boards of everything of highest account, while in 1900 the Shorthorn heifer Cicely, after winning two champion prizes as a breeding animal, won at Birmingham the Elington and the two 100-guinea cups offered by Messrs. Webb & Sons and Mr. Joseph Thorley, and also her Majesty's own 100-guinea cup as the best heifer.

But, perhaps, the greatest exploit of the past year were the triumphs of the Shorthorn bull Royal Duke which took the first at Royal Dublin, Royal Agricultural Show at York, and at the Highland Society's exhibition. We wonder how many times the King has honoured with his presence the show grounds of this kingdom? How many times has he sat in council with his fellow agriculturists? He has never spared himself, but has always taken a most lively interest in the most minute details, and we believe it has been a real pleasure to him. His own tastes, perhaps, lie more in the direction of the horse, and the Sandringham Studs are far famed. Shires and hackneys have made themselves a name, as well as the flock of Southdowns, for

which we fancy the soil of Norfolk is eminently suited. We need have no fear that even with kingly duties pressing heavily the interests of the farms will be neglected. There is a son who already shows signs of the farmer spirit, and who will now no doubt have a wider scope.

What a happy royal party visited the show at York only last year, and we see that for this year the Bath and West of England Society are most highly honoured; president and patron, the King of England and his heir. Her Majesty must have often wished that her beloved Consort could have lived to see the time when his wise schemes and plans were fully matured. He was in advance of his day, and he would have rejoiced to see how with giant steps the science of agriculture has moved.

We may fairly claim to have a farmer's King on the throne; and what of his dear Queen? Well, she hails from the most plucky little country in the whole world. Fifty years ago the agriculture of Denmark was practically in a state of bankruptcy; to-day she is the foremost of dairy states, and her butter and other dairy products are synonymous for what is of first-class quality. In dairy work Queen Alexandra has always taken the warmest interest, and we have a hope that the work in this country, which is in a backward state, may receive an impetus from her patronage. It is wonderful what a little encouragement from royalty will do, and we are perfectly certain there is a great future before us as dairy workers. We have neglected too long that branch of our business, and allowed the trade to get into other hands. No class of men will mourn more truly for her Gracious Majesty, and no class will greet more warmly our King than the farmers of Great Britain and Ireland.

N.B.—We have it on the authority of the "Agricultural Gazette" that her Majesty never allowed any animal to be exhibited that had not been bred by herself. We only wish more exhibitors would do the same; it is the man with the longest purse that goes about picking up and exhibiting prize stock, not the man who by patient perseverance produces the stock. Showing at our principal yards is getting quite a business, and every year is in fewer hands. This is not what was anticipated when agricultural exhibitions were first started.

Work on the Home Farm.

At last there are signs of springlike weather. After a few days of northerly winds we have a night's heavy rain from the south, and to-day bright sunshine. The land was beginning to get workable, and with a consignment of Scotch seed Potatoes at the station waiting to be unloaded there should, in spite of the rain, be no reason to defer planting them until a later date. Scotch seed is dear this year, being worth 20s. per ton more to the grower than Ware is. Trade in eating Potatoes has been very slow lately, and no wonder when we see in the paper that last week's imports were more than double those of the corresponding week last year. A farmer told us yesterday that he was willing to take 10s. per ton less than was offered him a month ago, but his are second quality stuff, and will deteriorate rapidly. Best Potatoes, though a dull trade, have not lost much in price, and we still consider they are worth holding.

Given fine weather, the horses will now have a busy time, and with hard work must be well kept. For the next few months the ration of corn should contain a proportion, say one-third, of split Beans. Mares in foal will be all the healthier for being regularly worked, but they must be kept out of the cart shafts, and should not be put in teams which work three or four abreast, as under such conditions horses jostle each other a good deal in turning again on the headland. We shall defer Barley drilling a little longer; the season is young yet, and we should like to see the dust blow first.

Very good is the report still as to the lambing, and we hope it may so continue. With plenty of Turnips for the single lambs, and record seeds for the doubles, the flock master will find everything plain sailing this season, and he will not need so much cake. The latter is still dear, but merchants are very anxiously pushing sales, which is a safe forecast of lower prices.

As the sun gains power attention must be given to young cattle which are closely confined. Exercise in an open yard is desirable, and a change to a plainer diet is a safeguard. Cake should be reduced to a minimum, as they will now thrive quickly enough without it, and what is saved now may be given to them with great benefit after they get cut to grass. The plethora of roots is having its effect in putting back the spring sales. We have none about here before March 20th, and many are in April, which very rarely occurs.

Dairy Produce.—Our imports of dairy produce during January amounted to 323,230 cwts. of butter, valued at £1,753,070; and 71,229 cwts. of margarine, of the value of £192,038; and cheese 142,954 cwts., of the value of £369,810.

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Barr's Champion Solid White Celery.—Solid and sweet, remaining long in condition. Per pkt., 1/- & 2/6.

Barr's Paragon Cabbage Lettuce.—Light green, leaves smooth and succulent; compact medium size; all heart; sweet and tender. Per pkt., 1/-; per oz., 2/6.

Barr's Pride of the Market Cucumber.—A grand Cucumber, with handsome dark-green fruit of fine form. An all the year round variety. Per pkt., 1/6.

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Journal of Horticulture.

THURSDAY, MARCH 14, 1901.

A Corner in Poisons.

THOUGH their numbers are few, there may be some who have overlooked the reports of an attempt made to monopolise the selling of poisons. We do not mean by this the selling of twopenny bottles of laudanum, but wholesale quantities of such poisons as weed-killers. And having mentioned weed-killer, the informed gardener or nurseryman will do well to ponder over the test case of the Pharmaceutical Society v. White, which has now passed into history in the law reports. A "corner" in poisons is about the last thing anyone could well imagine, even in these days of American enterprise, and happily we are able to say, that this "corner" is not likely to be established in these islands. But before we express ourselves further, it may be advisable to state a summary of what has happened during one year or a little more, in relation to the British Pharmaceutical Society and those who trade in poisonous compounds.

It happened, so the story runs, rather more than a year ago that an *agent provocateur* of the Pharmaceutical Society visited the shop of Mr. White, a Worcester florist, and asked for two gallons of weed-killer. The case was a pure instance of an attempt to trap a trader and engulf him in the embrace of the Pharmacy Act of 1868, which would lead to a prosecution and a fine. Mr. White, however, was not to be caught in the net spread for his reception exactly in the way the society would have preferred. He told the *provocateur* that he did not stock the article, but would take an order and send it on. The society, on these grounds, promptly moved in the County Court of Worcester to recover against Mr. White, who, though not a registered chemist, sells, or sold, a weed-killer which contains poison. The proceedings were instituted under the Pharmacy Act of 1868, and it may be mentioned that the fines usually go to the informer in such cases as



During **FIFTY-TWO YEARS** the "**JOURNAL OF HORTICULTURE**" has been written by Gardeners for Gardeners, and in its principles, its practice, and its price it still remains the same. One alteration is perhaps, however, necessary. Our modern methods of production have rendered the price old-fashioned, and hence in order to meet the wishes of the present generation of Gardeners the "**JOURNAL OF HORTICULTURE**" will hereafter be sold for **TWOPENCE** instead of Threepence.

these—a monstrous principle, worthy of a satrap of Siberia. Mr. White's solicitor took the opinion of an eminent counsel, which proved unfavourable, but dissenting therefrom, the solicitor, instead of advising his client to submit, counselled him to defend the case, when the Judge decided in favour of Mr. White. The Pharmaceutical Society then appealed to the Divisional Court of the King's Bench, where the judges upheld the judgment of Sir Richard Harrington, but they gave the Pharmaceutical Society leave to appeal. This the society did, and this second appeal was heard before the Supreme Court barely a month ago, Mr. White being once again successful. The Court dismissed the appeal with costs, Mr. White's counsel not being so much as called upon to argue in support of his contention.

Thus we have the judgment of the Judge of the County Court upheld by two Judges of the Divisional Court, and lastly affirmed by three Judges of the Supreme Court of Appeal. And the judgment of Sir Richard Harrington in the first instance was that Mr. White was only an agent and not the actual vendor.

This decision is only consistent with justice and common sense; and it is on such nice points as these that we see how necessary is a wise dispensation of the law. Here, too, we begin to fully realise the effect of these judgments, for had the Pharmaceutical Society won this test case, whither would their further proceedings tend? Success would have carried them to unexpected lengths. There is poison in paints, poison in oils, poison in dyes, in sheep-dips, in insecticides, vermin-killers, and in scores and scores of preparations whose handling is quite as dangerous as any weed-killer, and whose effects on the human system would be equally fatal if they were sufficiently tempting and palatable. The whole case reflects seriously on the moral tendency of the powers given by the Legislature to the Council of the Pharmaceutical Society, seeing that their virtuous actions in these cases curiously accommodate themselves to the results.

No one imagines that an irresponsible trading system in poisonous compounds is to be approved. We think that in times past, even though the cases of accidental or suicidal death from "technical poisons" have been remarkably few in number, that much more care is necessary when disposing of poisonous commodities. In years gone by we have ordered and obtained quantities of weed-killer from the local seedsman without so much as being asked a question; though it is true weed-killer drums are generally conspicuously marked with the word "Poison."

The Pharmaceutical Society can still carry their case to the House of Lords, though it is exceedingly unlikely that they will do so. For those whose interests we represent—that is, the horticultural sundriesmen, the seedsmen and gardeners—it might indeed be a great blessing were they to do so, as such a step would almost certainly result in the Pharmacy Act being repealed in certain sections and the present dubious situation ended. As it now stands, free trade, retail trade, active trade at all, in such compounds as weed-killers (and we may as well include sheep-dips) can never be carried on in absolute confidence. It is the duty of nurserymen, of seedsmen, horticultural sundriesmen, and gardeners, so far as each of them are able, to unite now and at once to have the law put upon a certain basis, for it is beyond all reason to suppose that the Parliamentary draughtsmen or the Legislatures responsible for the various Pharmacy Acts, ever dreamt of sanctioning such an interpretation as that which the Pharmaceutical Society now seeks to wrest from them.

The judgments already given show that the horticultural traders have less to fear from the chemist than formerly, but the monopoly undoubtedly remains. So long as traders, other than qualified chemists, simply maintain the position of true agents to chemical firms, they have little to fear. But there is the ever present danger of the monopolists trying to "corner" the trade in weed-killer poisons, &c., by taking action against the firms who supply the unqualified agents with that which is a poisonous compound. This is where the Pharmaceutical Society have failed. They started to fell the wrong tree.

After the Worcester case had been tried, and when the intentions

of the society we have already mentioned were grasped, a Trade Purposes Protection Society was inaugurated, and offices were taken at 5 and 6, Clement's Inn, W.C., to move constitutionally against the Chemists' Society in every possible way. The Protection Society deserves much credit for what it has already done toward bringing the condition of affairs to the present pass from those who have any dealings with poisonous compounds. This society is supported by the London Chamber of Commerce, and more or less by many private trade guilds or societies. An Amendment Bill, we believe, is about to be presented to Parliament, and all whom the existing regulations affect would be well advised were they to unite their cause with that of the Trade Purposes Protection Society.

Edinburgh Botanical Garden.

THE warm Orchid house is at the present chiefly noticeable for fragrant, rather than for brilliantly coloured flowers. *Platyclinis glumacea* and various species of *Epidendrum* each do their share in sweetly perfuming the atmosphere. *Platyclinis glumacea* reminds one in growth of a Lily of the Valley, but as its name denotes, the flowers somewhat resemble an inflorescence of a Grass. Grasses, however, are seldom so beautiful or large with their flowers as this ornamental Orchid is. The spikes arise with the young leaves, and as they remain slender, are pendulous, gently moving in the warm air. Some of the old *Cypripediums* are far less known than the *Platyclinis*; in fact, they belong to a past Orchid age. Yet such a plant as *Epidendrum cochleatum*, one of the earliest Orchids grown, seldom misses a month in producing its peculiar black and green flowers on lengthy spikes. *Epidendrum fragrans* and *E. odoratissimum* are free-flowering, and last a long time without fading. In a cooler house, in company with gay *Cattleyas* and *Lælias*, are white masses of *Cœlogyne cristata*. Along with the ordinary form are the two varieties, *C. c. alba* and *C. c. Lemoniana*. The latter is very fine, and comes to perfection later than the type.

Dendrobium aureum is expanding its last blossoms ere the young growths start to build for next season's fair flowers, while the first *D. nobile* are showing blooms. This Orchid is one that can be depended upon to flower, grow, and generally do all things in proper season. This, unfortunately, cannot always be said of such species as *D. Wardianum* and *D. Phalaenopsis*, which sometimes dwindle away in a most melancholy fashion without hinting to the grower the reason why. A large plant of the Australian *Dendrobium speciosum* Hilli is the most striking thing in flower in the *Dendrobium* house. It cannot be depended upon to develop spikes every year, but when it does bloom it goes about it in good style. Scores of clear yellow flowers, thickly placed on rigid stems, are produced from the top of the tall pseudobulbs, producing a pleasing effect.

Caladenia carnea alba is a little bulbous Orchid, also native of Australia. Its flowers are white, borne on slender hairy stalks, and they last a month or more. It requires the same treatment as an ordinary bulb, withholding water for the most part when at rest, increasing the supply when the small growths appear. *Saccolabiums*, *Catasetum*, *Oncidiums*, *Brassavolas*, and other genera, including, of course, the ever present *Cypripediums* in numerous sorts, are crowned with flower.

The usual array of flowers decorate the stages of the greenhouses. *Acacias*, occupying a bed to themselves, are making rapid strides towards the glass roof, and display numerous masses of golden balls in varying shades. Long pendent shoots of the New Zealand *Clematis indivisa* are closely set with showy white flowers. The sprays are so long that a lofty house makes the best home for this graceful climber.

Some of the Cycads in the tropical Palm house are developing new heads of fresh green foliage, and in this house the sweet-scented *Brunfelsia* or *Franciscia calycina* is in full bloom. A large planted-out specimen is very attractive, the flowers varying in colour with age. Blue, when freshly opened, they gradually pass to white ere they fall off. Fruits of the delicious monster—*Monstera deliciosa*, are ripening on a plant climbing round a stone pillar. A small portion of the fruit is eatable, though it requires careful picking to avoid parts which are decidedly unpleasant. The large leaves have holes, regularly formed, which gives the plant a singular appearance. *Agave attenuata*, one of the so-called Century Plants, has produced a large spike of flowers. The latter are not open at present, their development being somewhat slow, as the plant is in a cool house.

What of the outdoor flowers? The earliest are here. But the most pleasing vegetation outside is the rich, green grass. The colour of the sky is reflected by the Crocuses, but the wind is cruel to these flowers, soon bruising their delicate petals.—D. S. FISH.

NOTES & NOTICES

Weather in London.—On the afternoon of Wednesday, the 6th inst., London, experienced a sudden and boisterous thunderstorm. The weather on the whole has been colder than during the week previous, and a considerable amount of rain has fallen. Saturday was bright for the most part, while Sunday, Monday, and Tuesday were agreeable days. As we go to press on Wednesday it is dull.

Weather in the North.—In the beginning of the week ending the 11th inst. there were one or two very boisterous nights, and sleety showers fell during the day, the hills all round being covered with snow. Since the 6th there has been an improvement, showers, sunshine, and dull fair intervals alternating. Sunday was a most lovely spring-like day, but became colder towards evening, while Monday was duller but fair throughout.—B. D., *S. Perthshire*.

National Auricula and Primula Society : Southern Section.—The annual report of the above society shows a balance in hand of £19 17s. 6d.; and without a bank account no society can prosper. The past season was not altogether a satisfactory one so far as cultural conditions were concerned, but the show held in the Drill Hall in conjunction with the Royal Horticultural Society's meeting on April 24th, 1900, was of a high-class quality. The twenty-fifth annual exhibition will be held in the same Hall on the 23rd of April this year. Mr. T. E. Henwood, 16, Hamilton Road, Reading, is secretary.

Ghent Third Quinquennial Horticultural Show.—This great show, which receives the active support of the Belgian Government and of the provincial administrative bodies, has not been definitely fixed yet as to date, but it will be held some time during August next. The *programme définitif* and the schedule of prizes is announced to appear next month. The present preliminary programme gives a rough idea of the various sections into which the show will be divided. There will be sections for new plants, Orchids, Palms, Aroids, stove and greenhouse plants, floral designs and decorations, and some divisions more or less only applicable to continental gardeners and nurserymen. Any communications relating to the exhibition should be made to the secretary, Mr. A. Van Bockxstaele, Cercle Horticole Van Hontte, Ledeborg, Ghent, Brussels.

Messrs. Mackenzie & Moncur's Catalogue.—Those who expect to read of a dry catalogue describing patent hot-water joints, or improved valve-gearing, hot-water circulation, and so on, will be agreeably surprised to learn that the catalogue of this great hothouse building firm (Balcarres Street, Edinburgh) is mainly composed of very handsome illustrations. These represent photographic selections of the finest erections in the way of conservatories and other glass houses that Messrs. Mackenzie & Moncur have finished during recent years. For instance the beautiful conservatories at Falkland Park, S.E.; Sefton Park, Liverpool; Philiphaugh, Selkirk, N.B.; Sunderland Public Park, and other places are herein portrayed. Various ground plans are also furnished, so that the catalogue provides a selection in almost any style of glass house or range according to the taste of the patron. To all who are likely to have ranges or houses to construct we can recommend the catalogue of which we now write.

The Apple Cure.—There are so many sufferers nowadays from rheumatic and gouty maladies, says the "Free Lance," that I feel I am only doing a service to them to advise them to try an Apple diet. I do not, of course, mean that they should live upon the "fateful fruit of Paris," but I have during the past few months seen such beneficial results from the daily consumption of Apples that I am persuaded many pains and much medicine might be avoided by their use, as also by the drinking of cider instead of wine or beer. In cider-producing districts rheumatism is unknown unless imported. The Apple contains a powerful blood purifier called malic acid, which is found in no other fruit or vegetable, and this it is which acts so healthfully on the system. Now that California and Tasmania have placed such splendid orchards at our service we need never be without Apples. Personally I prefer the Tasmanians—they have more flavour than the Californians.

Appointment.—Mr. J. Botley, for over two years foreman at Blythewood Gardens, Maidenhead, as gardener to Rev. H. M. Wells, Scarlets Park, Twyford, Berks.

Royal Meteorological Society.—At the ordinary meeting of the society, to be held by kind permission of the Council, at the Institution of Civil Engineers, Great George Street, Westminster, on Wednesday the 20th inst, at 7.30 p.m., a lecture will be delivered on "Climate, and the Effects of Climate," by Dr. Hugh Robert Mill, F.R.S.E. The lecture will be illustrated by lantern slides. Fellows may introduce friends.

Mrs. Lawson Carnation off Colour.—It may please Mr. Robert Sydenham (who has no great appreciation for the Lawson Carnation) to learn of a complaint made by an American grower in one of the horticultural journals of that country. The grower writes:—"I would like to know the cause of Mrs. Thos. W. Lawson Carnation coming light in colour. Some are all right, while others are a very light, washy colour. The soil is a clayey loam."

Windsor Elms Doomed.—According to a daily paper some of the finest Elm trees in the Long Walk at Windsor have been condemned as unsafe, having been injuriously affected by the dry weather in recent summers. Many of the trees have already been felled and in their places young Elms planted. The avenue was originally planted in 1680, and extends along three miles, leading to the top of Snow Hill, from which there is a charming view of the surrounding country.

Flowers from Scilly.—The London Press furnishes its annual contribution of paragraphs relating the glories of the Scilly Isles in their pristine loveliness, bedecked with myriads of Narcissi. Despite storms and wet weather it appears likely that the harvest of blooms will be a large one. No less than 27 tons of flowers were shipped from the islands' shores on the 5th inst., and as each package weighs only a few pounds, some idea may be formed of the enormous bulk these figures represent. The steamship was late arriving at Penzance, where the huge floral consignment was smartly taken in hand by the Great Western Railway officials, and early in the evening a special express train containing nothing but flowers was speeding its way to the London, midland, and northern markets.

Death of a Scottish Gardener.—We regret to announce the death of Mr. A. Henderson, late of Thoresby Gardens, at the age of sixty-eight. He had his early training in some of the best gardens in Scotland. In 1858 he was engaged by Mr. David Thomson to go with him as foreman in Archerfield Gardens, and in 1861 he was engaged to be head gardener to the late Earl Manvers at Thoresby Park, where he laid out and built from their foundations the fine gardens there, as well as the grounds round the new mansion. Up to his retirement, at the late Earl's death, Mr. Henderson managed that fine place with unbroken and conspicuous success for forty years. He was of a very modest and retiring disposition, but at the same time of energetic and very methodical habits, and a manager of men. His unremitting devotion to his duties, and his success as a cultivator, coupled with his sterling uprightness and good conduct, very soon earned for him the highest esteem, and we may say the friendship also of Lord and Lady Manvers, which existed without a break throughout his long service. On his retirement he was treated with most substantial tokens of their appreciation and respect. To mourn his loss he has left a widow and one married daughter, and he will be missed by friends who for many years held him in high esteem.

Obituary.—Horticulture has lost one of its best exponents by the death of Mr. Wm. Ironmonger, who was for more than forty years one of the principal assistants in the nurseries of Messrs. Wm. Paul & Son of Waltham Cross. He gained his early experience in the gardens of Earl Cowper at Panshanger Park, near Hertford, and became one of the staff of the Waltham Cross Nurseries more than forty years ago. For many years he was a prominent figure at the exhibitions, the large specimen Roses then so much in vogue, and so finely shown by the firm, being grown and set up under his supervision. In 1877 he left Waltham Cross to take charge of one of Messrs. Wm. Paul & Son's branch nurseries, and retired four years ago. He died at Ridgewood Farm, Uckfield, on the 9th inst., in the seventy-ninth year of his age. His great intelligence and integrity of character placed him on a high level in the esteem of his employers and of all who came in contact with him.

A Land of Disused Orchards.—The Monmouthshire County Council have undertaken to remedy the lack of fruit culture in the district under their control. They propose sending fruit trees to different centres, and will appoint an expert to show how they should be planted, pruned, and tended. Glamorganshire and Monmouthshire, it is stated, contain more disused orchards and fruit gardens than any two counties in Wales. The mistaken notion that it is impossible to compete with imported fruit seems to have much to do with this laggardness.

Amateur Gardening.—On Saturday evening, the 2nd inst., Mr. C. H. Herbert gave a lecture to the members and friends of the Sparkhill and District Amateur Horticultural Society of Birmingham at the Sparkhill Institute. The subject chosen was "Cyclamens and Primulas, and How to Grow Them." Several fine specimen flowers were shown on the lecturer's table. Mr. F. S. Jenks presided, and a large accession of members was announced. It is interesting to add that the society established a summer exhibition two years ago, and upwards of £100 in prizes are offered for exhibits at the show to be held in August next.

Mearns Rose Society.—The "Year Book" of the Mearns Rose Society (Valley of the Clyde) is now published, price 6d., and contains discursive articles of an interesting and useful nature for northern cultivators of the Rose. Mr. A. Dickson of Newtonards discusses the newer Roses, and mentions the American variety Liberty; also Bessie Brown, Shandon, Mrs. Edward Mawley, Sunrise, and others. "Notes on the Weather of the Parish of Mearns" is dealt with by Mr. J. B. Murdock of Capelrig, while "Rose Reminiscences" form a subject which Mr. A. Sweet digests. The editor of the "Year Book" (Mr. W. M. Melville) furnishes a valuable paper on "The Rose Season of 1900." The Mearns Rose Show will be held on Saturday, July 20th, and the secretary's address is Mearns Rose Society, Newton-Mearns, N.B.

Sheffield Chrysanthemum Society.—The annual dinner of the Sheffield Chrysanthemum Society was held at the Cambridge Hall on Tuesday evening, 12th inst., and was very successful. Each guest was the recipient of a very pretty buttonhole, a pleasant surprise to most of them. Ald. S. Roberts, D.L., the new president, was in the chair, and there were also present Mr. C. E. Jeffcock (vice-president), Messrs. John Maxfield, H. J. Jones (London), J. G. Newsham (treasurer), W. Housley (hon. secretary), and other members and delegates. The president, on the conclusion of dinner, submitted the toast of "The King," which was drunk with great heartiness. Mr. M. H. Willford, in proposing "The Visitors and Kindred Societies," referred to the fact that this year they had a new president, and that they would have to find fresh quarters for their annual show in future. Mr. C. E. Jeffcock then presented to Mr. Housley, the hon. secretary, a beautiful marble cock and an umbrella, with a silver tea urn for Mrs. Housley. Mr. Jeffcock was pleased to have this opportunity of expressing his appreciation of the great work done for this society by the hon. secretary. It was gratifying to know that the work of seventeen years had been crowned with such success. (Applause) Mr. Housley, in accepting the gifts, said though it was true he had worked hard for the society, that work had been made easy by an excellent committee. The society was established in 1885, and while its first balance-sheet showed an expenditure of £121, the last one showed £437. The society had a balance in hand of £81, and a reserve fund of £53. "The President and Vice-Presidents" was the next toast, proposed by Mr. Littlewood. The president responded. He first expressed regret at the absence of Mr. Milner through illness, and announced that that gentleman had telegraphed expressing the hope that they would have a very pleasant evening. Speaking to the toast, Ald. Roberts said he must first thank them for electing him their president. Their society had during recent years gone up by leaps and bounds; its membership had advanced only recently from 100 to 300. They did not work in opposition to other societies, but merely in friendly rivalry. The cultivation of flowers was refreshing and elevating, and in such large cities as Sheffield it was well to encourage this pursuit amongst the people. In conclusion, he expressed the hope that the next exhibition at the Cutlers' Hall would be as successful as any of its predecessors. (Applause.) Mr. John Maxfield proposed "The Sheffield Chrysanthemum Society," which was responded to by Mr. Newsham. Mr. A. S. Jarvis gave "The Nurserymen and Non-competing Exhibitors," to which Mr. Artendale and Mr. Jones (London) replied.

Proposed National Sweet Pea Society.—Mr. Percy Waterer presided over a meeting held on Tuesday afternoon at Winchester House to consider the desirability of forming a National Sweet Pea Society. There were some thirty persons present, and, on the motion of Mr. Scrutton, seconded by Mr. Zankey, it was almost unanimously decided that such a society would be welcome.

Society Schedules and Reports.—We have received the first annual report and schedule of prizes of the National Auricula Society (Midland section); also of the National Carnation and Picotee Society (Southern section), to both of which we shall refer next week. The schedules of the Ancient Society of York Florists, Shropshire Horticultural (Shrewsbury), and Richmond Horticultural Societies amongst others have reached us, but the pressure for space detains us from reviewing these this week.

Scottish Horticultural Association.—The syllabus for session 1901, and the twenty-fourth annual report of the above, has been sent out, though none of these reports have as yet been sent to this office. The publication this year is bulkier than usual. That is a good thing, for full reports of good essays are better than mere summaries. The report states that the present membership is over 1000; and success is likely to be greater because of the increased strength to the ranks. Last session saw 129 ordinary members added to the previous list.

Birmingham Gardeners' Association.—"The Cultivation of the Hippeastrum" was the subject dealt with at the recent meeting of the above, illustrated with flowering plants, by Mr. Alfred Cryer, gardener to J. A. Kenrick, Esq., Berrow Court, Edgbaston, and who has for several years past taken special interest in the cultivation of the Hippeastrum, the collection being the result of hybridisation by the essayist, originated from first-class varieties purchased some years since. After a few apropos introductory remarks anent the history and nomenclature of the Hippeastrum, they were followed by a concise and thoroughly practical exposition regarding the hybridisation and cultivation of the plants. Additional value was afforded by the admission of the failures experienced by the lecturer; and a special lesson—disappointment—which he had never forgotten, was that he inadvertently cut, for decorative purposes, flowering scapes of two or three seedlings of superior quality, and from which it was intended to cross-fertilise, and which mishap he ascribed to neglect of special marking or naming. Mr. Cryer's (who has for the last fourteen years been a successful local exhibitor of "groups of plants for effect," and an especially excellent cultivator of vegetable-) practical remarks were listened to with marked attention, resulting also in an animated discussion, whilst a first-class certificate of merit was worthily awarded the collection of Hippeastrums, including a well-flowered plant of *Dendrobium nobile* Leechianum. A vote of thanks was also accorded Mr. George Stacey, Harborne, for a large dish of excellently kept and well-coloured Lane's Prince Albert Apples from a cool cellar. In addition to the gradually increasing accession of members of the craft, several others at the close of the meeting were incorporated, and the chairman (Mr. W. B. Latham), in conjunction with the lecturer (this being the latter's first essay during his membership from the inception of the association some sixteen years ago), expressed the wish that others—especially the younger members, might also be induced to afford practical papers and enter more freely into the discussions at the meetings.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901.										
March.										
Sunday .. 3	S.S.W.	deg. 43.8	deg. 39.9	deg. 48.6	deg. 37.9	In. 0.07	deg. 42.0	deg. 42.8	deg. 43.5	deg. 29.5
Monday .. 4	S.S.W.	41.7	40.5	53.9	35.2	0.15	41.0	42.7	43.6	26.4
Tuesday .. 5	S.S.W.	49.9	48.7	55.1	41.5	0.04	43.1	42.7	43.9	40.0
Wednesday .. 6	S.S.W.	46.9	42.4	47.4	40.2	0.23	42.7	43.2	43.9	33.0
Thursday .. 7	S.S.W.	41.3	40.0	48.0	40.1	0.12	42.0	43.0	44.0	34.0
Friday .. 8	N.N.E.	41.6	39.8	45.4	36.8	0.08	42.4	43.1	44.1	34.9
Saturday .. 9	N.N.E.	38.3	36.7	43.6	35.0	—	42.1	43.2	44.1	29.3
MEANS .. 1.		43.4	41.1	48.9	38.1	Total 0.69	42.2	43.0	43.9	32.4

A week of very squally weather, hail and rain falling on six days.



Double Cinerarias.

ON page 150 of your issue of February 21st I observe what must certainly be a *lapsus calami* on the part of your able correspondent R. Dean. In the paragraph dealing with Cinerarias he says, "Very fine donble strains have been secured, but they are scarcely popular, as they can be increased only by division or cuttings." As such a statement as this, coming from so able an authority as Mr. Dean, is likely to canse some confsion, I shall feel obliged if you will kindly allow me to state that the seed of double Cinerarias can be obtained from any respectable seed merchant in Europe, and while some of the plants produced revert to the single type, a good proportion of them produce beautiful double flowers. Being a composite flower there is nothing unusual in this.

As regards the improvement that has been made in the size of the blooms of the single varieties, the following extract from an article by A. Kendall of Stoke Newington (one of the foremost raisers of the hybrid forms) in "The Florist" for April, 1849, may be of interest to your readers. The article is entitled "Properties of a Good Cineraria," and states, "The size of the flower is a secondary consideration; but where every other property is equally good a large flower will always take the lead, and I do hope yet to see every pip as large as a half-crown and as round as a full moon. The petals should slightly cup; a perfectly flat flower will pass, but if the petals reflex it is a fatal point. The habit of the plant should be close, throwing up a large compact mass of flower. Colour must of necessity take a last place, but as a general rule the high colours have most admirers; . . . yellow and scarlet are perhaps not altogether hopeless colours for the Cineraria. . . . In the tipped or parti-coloured ones a mazarine blue and a rich purple are much wanted." In the same work appears a coloured plate of three new varieties raised by A. Kendall, and one by E. G. Henderson. The extreme width of the largest flower, named Richard Cobden, is exactly that of the modern half-crown.—S. B. DICKS.

Late Dessert Fruits.

IT is only due to Mr. Challis that I should acknowledge the favour he has done me and other readers of the Journal in describing the means for providing such a wealth of late dessert in outdoor fruits last autumn, and the varieties that furnished it. If Mr. Challis detected in my comments a "spice of satire, if not of slight censure," he certainly misjudged me, for Mr. Challis's age and wide experience would buoy one's thoughts and feelings well above such an undesirable water mark. Many will agree that it is admittedly more satisfactory and pleasant to know who one's combatant is, whether to agree or disagree, but the initial signature often conveys a virtue which, I am sure, Mr. Challis will not despise even in a supposed opponent—namely, modesty. The object was the gain, not only for the writer who assumes an initial signature only, but other readers as well, because the subject is one of such vital importance to every gardener responsible for a fruit crop.

Reviewing my note with a critical eye, Mr. Challis evidently overlooked some of the points raised, for he says, "With reference to the flavour of late fruits there are diverse opinions, but as beauty is said to be in the eye of the gazer, so flavour is on the palate of each individual. . . . Should we not let the test of flavour rest with whom it is our duty to endeavour to please?" Most certainly this should be every gardener's aim, and might it not be further said that gardeners' ideas become largely the concentrated opinions of their employers? There are a great many kinds of fruits that, speaking personally, I do not even taste, and an expressed opinion of the merits of these is, more often than otherwise, based on the opinions of others.

If Mr. Challis refers to my previous comments he will find that Golden Eagle was grown here, but found wanting in flavour, and thus a request was given for its place to be filled with another. This was from a cold Peach case, probably from outdoors it may be of better flavour. There are plenty of cases where Salwey has been planted and rooted out again, simply on the score of quality; but the prospect of having Peaches in November for shooting parties is so tempting that I feel sure those even who have discarded these late ones will reinstate them; at any rate, speaking for myself, I shall not be surprised if another autumn order for fruit trees will not contain these late Peaches among the number. With a varying season there comes to some extent a correspondingly varying depth of quality, and thus what in one season may be despised, would in another pass without such censure.

I must admit that in the successful keeping of Coe's Golden Drop Plums I have not been successful in maintaining a supply of sound fruit later than the beginning of November. With me Coe's Late Red

last autumn was in mid-November of excellent quality, firm and better in flavour than Golden Drop. These were gathered from an east wall, the Golden Drop from a west aspect. I have since planted the latter on an east wall so as to, if possible, find a site that may be favourable for a few days' later use. Coping would be a decided gain in the preservation of the fruit from rain and frost, but this, unfortunately, does not come within the means of many gardeners, not even for Peach growth. A portion of a south wall planted with Peaches was such a failure here from leaf blister in spring that they were replaced by other trees. A coping of glass has quite altered this, and now Peaches and Apricots which are reinstated have changed the once attendant worries into successful crops, with far less labour and anxiety.—R. A.

Immature Tomatoes.

I READ with considerable interest the article on immature Tomatoes. Last year my plants were affected in a similar manner. They were grown in pots, in an unheated house, and bore a very heavy crop. But with very few exceptions, the upper part of the fruit remained quite green and hard, while the other portion was perfectly ripe. It did not appear to affect the quality of the fruit, but the appearance was quite spoilt, which for table use is quite as important. As regards feeding, they were watered with weak manure water, drainings from the manure heap, with an occasional sprinkle of Thomson's manure. I have been much puzzled as to the cause, and would be glad if someone would give their opinion on the matter.—W. T. C.

The Persimmon.

I HAVE been interested in reading the recent allusions to the Persimmon in the Journal, as it is an old friend of mine. When resident at Hong Kong many years ago it figured prominently amid the many fruits in the market there. Together with the Pine Apple, the Mango, the Litchi, and the Banana, it forms a refreshing concomitant of every meal during the hot summer months, when the temperature is above 80° night and day and the air drenching with mist and rain. Under these circumstances the pulpy and acidulous flesh of the Persimmon is more grateful and better adapted to please the palate than any of our temperate fruits. But it by no means possesses the ambiguous and unflattering character given it in your paragraph of last week, being there perfectly ripened. I believe the unripe Persimmon is used figuratively in the southern United States to express the quintessence of all that is nauseous, much as assafoetida is here; but I have never encountered it in this condition. When grown naturally in its proper habitat it is more agreeable and less cloying than most tropical fruits. It is very like a medium-sized foreign Tomato of a dull brick-red colour, and when cut across shows no dissepiments, but a mass of flesh-coloured seedless pulp. It has this superiority to the Mango that you can eat it with ease, while to watch the efforts made by a novice to gnaw the flesh off the flat-seeded Mango suggests the antics of a hungry dog attacking a bladebone, and an expenditure of energy incompatible with the climatic conditions of the Hong Kong summer.—BUNGALOW.

Cyclamens.

A FEW months ago a correspondent to the Journal remarked that he intended placing his Cyclamens for their flowering period upon a gentle hotbed, so that the moisture rising from the fermenting material would keep the soil in the pots moist, and render watering in the usual way almost unnecessary, it being his opinion that watering upon the crowns amongst the leaves and flowers is the main cause of damping. Perhaps others have, like myself, been looking for an account of the result of such treatment. It is customary when potting Cyclamens not to cover more than one-third of the corm with soil, leaving two-thirds of it and all the leaves it has on quite bare. When a plant is watered from a can, even if the stream is directed into the centre of the growths, if the drainage be good it will all have passed through the soil, moistening it, and wash away acids which would if allowed to remain cause sourness and injure the roots and rootlets. If the atmosphere be dry the parts of the plants exposed which got wetted will quickly dry again. Keeping the soil moist by standing the plants on a bed of damp material the moisture is stagnant in the soil, rendering it very liable to acid-sourness, also a moist atmosphere is maintained continually, which will be far more liable to canse flower and leaf buds to damp off than being wetted for a short time only by watering in the ordinary way in a dry atmosphere. Having discovered the practice of placing Cyclamens during their flowering period on stages and beds of dry ashes in structures where a dry atmosphere prevails productive of good results, I conclude it is a commendable one. I have found that when prominent markings in the foliage is desired a little extra peat added to the compost of the final potting will be found useful. Perhaps your aforesaid correspondent might give us his experience.—H. C. H.



Odontoglossum Adrianae Mrs. Robert Benson.

OUR illustration of this handsome *Odontoglossum* is from a plant exhibited at the Drill Hall meeting of February 26th. The flowers are of large size, and are also broad and stout. The creamy white ground is thickly spotted with light brown, while the edge of the petals is yellow. The variety was shown by Captain Holford (gardener, Mr. A. Chapman), Westonbirt, Tetbury, and received an award of merit.

Laelio-Cattleya × *warnhamiensis*.

C. J. LUCAS, Esq. (gardener, Mr. G. Duncan), the well-known enthusiastic orchidist of Warnham Court, Horsham, Sussex, showed a finely flowered example of this hybrid Orchid before the Orchid Committee of the Royal Horticultural Society at the meeting of February 26th. The hybrid was shown a couple of years ago at the Drill Hall, when an award of merit was assigned to it. The promises of the plant have been amply fulfilled since then—so much so indeed that the committee annulled the former award in favour of a first-class certificate on this occasion. The flowers are of a fine copper-orange colour, with rich purple lip. Several handsome plants were exhibited at the Drill Hall.

Platyclinis glumacea.

SEVERAL well-flowered pieces of this pretty and graceful Orchid are to be seen in flower in the Orchid houses at Kew, where they make a distinct feature among surrounding plants of *Dendrobium*, *Phaius*, &c. It is a native of the Philippines, and has been in cultivation for half a century. It is of very neat habit, making a dense mass of small bulbs surmounted with medium-sized leaves, the bases of which are sheathed with light brown scales sometimes tinged with red. The flowers are ivory-white, small, and very fragrant. They are borne in dense, pendulous spikes, surmounting wiry stalks, which arise from the apices of the bulbs. It may be grown in either shallow pots or baskets in a warm, fairly moist, atmosphere. A figure may be seen in the "Botanical Magazine" at t. 4853, under the synonym of *Dendrochilum glumaceum*—D. K.

Dendrobium Farmeri.

The evergreen section of *Dendrobiums* contains a fine lot of plants, but few better than this. The plant is free flowering, and healthy in growth; the blossoms are rich in colour, and the racemes are extremely elegant. The deciduous section as a rule need more heat when finishing their growth than these. There is such a thing as overripening *D. Farmeri* and its allies, or at least prematurely ripening them. When the pseudo-bulbs are quite finished and swelled to their full size a little extra sun is an advantage, but its continued health and a beautiful inflorescence is looked for the growth must be the first consideration.

I have known many cases where, owing to starvation treatment, these plants have been induced to flower themselves almost to death, the whole energies having apparently been concentrated upon flowering, and the basal buds having become blind in consequence. This is not culture, and it is far better to be content with a moderate amount of flowers and to keep the plants in health. *D. Farmeri* grows well in the intermediate or *Cattleya* house. If it is placed with the deciduous species while growing it must be removed as soon as the growths are made up, and placed in cooler quarters. The growing season only lasts about six weeks.

Dendrobium Wardianum.

AT the present season of the year this universal favourite amongst Orchids flowers with remarkable profusion. The illustration on page 211, from a plant in Mr. Chamberlain's collection at Highbury, justifies the reference to its flowering capacity. During recent years market growers have initiated themselves in its culture, for the strong and remarkably handsome flowers have become popular with "the people." The Burmese form, which I now refer to, was not brought to the notice of cultivators till 1875, though the other form of this species, having stouter growths and smaller but richer flowers, had been flowered in England seventeen years previously. Messrs. Low and Co. have the honour of introducing this splendid *Dendrobe*. It was a plant of the Assam form that Mr. Warner, the author of "Select Orchidaceous Plants," first described, and gave to it the name of *D. Wardianum*, after Dr. Ward of Southampton, in whose stove the plant first flowered. As there are thus the two forms of *D. Wardianum* the Assam variety is, strictly speaking, the true species in botanical nomenclature. The Burmese form is a variety. Of the two the latter is, however, most popular, and is most easily grown. A second variety, but truly recognised as such in gardens, named *D. W. candidum*, also finds much favour.

Cymbidium grandiflorum.

It is rather difficult to account for the almost total neglect of this pretty old species in Orchid collections. I was very pleased to see a fine spike exhibited at the Drill Hall on February 26th. Possibly it is owing to the fact that a considerable portion of the flower is green, a colour that is not popular as a rule, but in *C. grandiflorum* the green of the sepals and petals is a nice foil to the brighter tinting on the lip, though when the spikes are on the plant it must be allowed that there is rather too much green. It is as a cut spike that the beauty of the species is best seen.

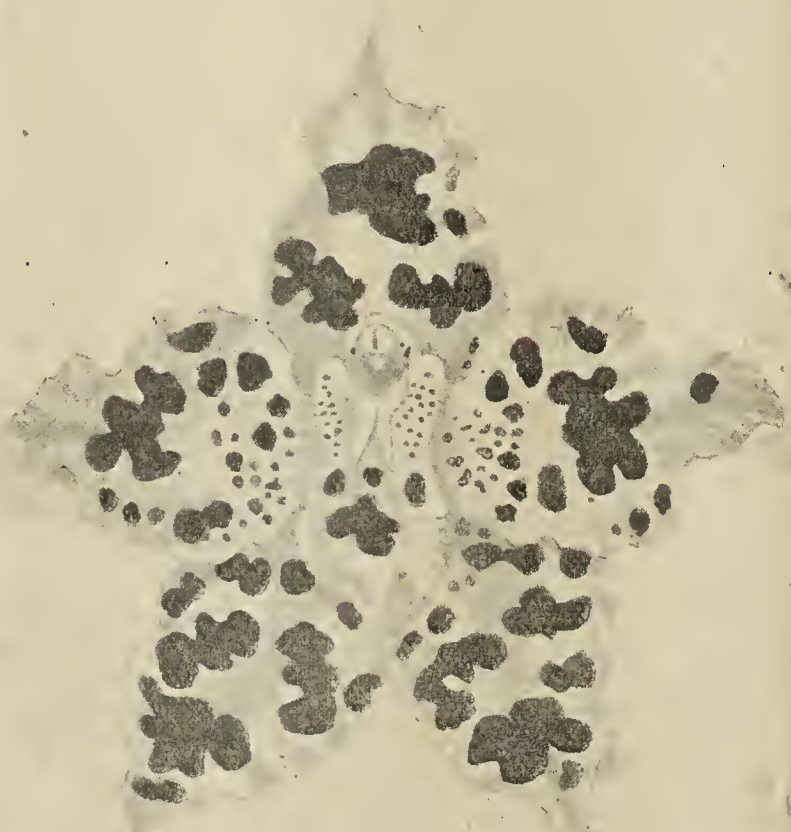
C. grandiflorum is a native of the eastern Himalayas, where it grows at a great elevation; consequently, the temperature for this need not be as high as that for the species inhabiting the hotter regions in the Malay Peninsula and the tropics generally. It has, in fact, been very well grown in quite a cool house with Mexican and Peruvian kinds. It delights in a copious water supply to the roots and in the atmosphere, while during the hot weather the leaves may be freely syringed with advantage. For compost use two parts of loam to one of peat and a little sphagnum, adding abundance of rough crocks and ballast, and allowing healthy plants plenty of pot room.—H. R. R.

Odontoglossum maculatum.

ALTHOUGH one of the first species of *Odontoglossum* to be introduced, having been put into commerce as long ago as 1838, the plant mentioned above is often met with, in spite of the fact that some of the more recent introductions are more showy. It is a Mexican species, making thick pseudo-bulbs about 2 inches in length. From the apex of the pseudo-bulb a fairly large leaf is produced, one only springing from each. The flowers are borne on stout spikes, and last in good condition for six or eight weeks. They are yellow in colour, spotted and barred with brown, the margins of the petals being more or less crisped. A number of varieties are in cultivation, differing from the type in the size and markings of the flowers. The flowers of the type are about 3½ inches across.—K. D.

Sophranitis Rossiteriana.

THE award of a first-class certificate by the Orchid Committee (R.H.S.), at the meeting of February 26th, to such an Orchid as this is to my mind a great mistake. Beyond its rarity it appears to have no other merit, for the colour is not by any means attractive. Everyone admires the old *S. grandiflora*, with its glowing scarlet or crimson flowers; but the colour of the newcomer, as far as I can see, is neither a red nor a yellow—not even a good orange, but a dirty looking indescribable tint. Had this been the original colour of the plant, and *S. grandiflora* been suddenly introduced, I could have imagined this high award being given; but as I was told at the meeting referred to, it is simply a "matter of taste."—H. R. R.



ODONTOGLOSSUM ADRIANA MRS. ROBERT BENSON.

The Destruction of Alpine Plants.

THE French authorities have followed the example of the Swiss Government in seeking to protect the Alpine plants from the destructiveness of the tourist. The Prefect of the Isère has published a decree forbidding the uprooting or sale of a number of the more beautiful or interesting kinds. Great as is the Alpine chain, with upland valleys and peaks almost countless, yet no attractive plant, however abundant, can long survive the ravages of the tripper, and, what is worse, of the vendors of flowers. Those of the lower slopes escape by being also common outside the chain, though even here the Cyclamen is to be protected; but at from 3000 to 4000 feet a marked change sets in. The lowlanders gradually disappear, and

flowers are therefore massed together, enhancing the colour effect. The blue Star Gentians, the Moss Campions, and the Androsace are often blots of colour, but Pansies and Bell Gentians, Asters, Geums, Orchis, the sweet-scented Daphne, and a hundred others, dapple the grass with blues and purples, pinks, yellows, and white. Such flowers may be found from one end of the Alps to the other, together, of course, with the Edelweiss, which is another of those specially named for protection. There seems no particular reason why this little whitish, downy star-flower should be so greedily sought; but it is surrounded with legend, and the inexperienced think it is generally gathered at the risk of life. In reality, it is much more common on the rough grassy slopes than on precipices, and is still found in most parts of the Alps, but more profusely, we think, in the eastern districts. In this direction, and again in going southward, the Alpine flora changes by taking in wanderers from each of these quarters, and



DENDROBIUM WARDIANUM. (See page 210.)

the highlanders of the botanical kingdom take their place. From about 5000 to 7000 feet we are in the richest zone of the Alpine flora. The stony slopes are thickly covered with the dwarf Rhododendrons, one of the plants mentioned in the Préfet's decree. Of these there are two species, one much commoner than the other, but at a little distance barely to be distinguished. A Rhododendron slope in full flower exceeds in beauty even one covered with British Heath or Ling. But, as most of our countrymen are compelled to take holiday in August, they know little of the Rhododendrons or the other flowers of this zone. To see them we must visit it early in July, for they begin to wane before that month is ended. Flowers, indeed, there are at 8000 feet, and still higher, which, of course, come into blossom at a later date, yet on these stony places they are never in such profusion. In July, says the "Standard," the sight is worth a long journey. The short turf is, in places, as full of flowers as a garden bed. Alpine plants, as a rule, do not grow high, and their

is, perhaps, nowhere more interesting than in the region round the great central mass of the Dauphiné Alps, the departments of the Isère and Hautes Alpes. The rocks are so varied that they nourish a great diversity of plants, while the alps of the Col du Lautaret, a little north of the magnificent peaks all about the head of the Vénéon, have long been famous with botanists. Many rarities grow there; but the beauties of the commoner flowers will satisfy the ordinary traveller, while, perhaps, nowhere in the Alps is there such a profusion of white Narcissus as on the upper pastures about this high road. Yet not so long ago all this region was well-nigh unknown, even to French tourists. In the early 'sixties, when a few pioneers from the English Alpine Club made their way into the upper valleys of the Isère, Arc, and Romanche, the inns were few, small, and generally squalid; now the decree we have referred to has been found necessary, so numerous are the visitors to the district, and so serious are the depredations of the more thoughtless among them.

The New Forestry.*

"THE New Forestry" embodies an appeal by one of the oldest, most experienced and competent British foresters, for the introduction of the German forestry system into Great Britain. This may be said to summarise the main object of what must be regarded as an exceedingly interesting and really valuable book of 200 pages. Over and over again the author deplores the deadly lack of any strict system of general practice in British forestry; the neglect of working forestry plans, and the absence of anything in the shape of methodical rotation of cropping. The irreconcilable differences of opinion among professed experts in British forestry, is expressed as one of the greatest stumbling blocks to success. This book aims at supplying a guide to the owners of small estates and their foresters, to whom the larger works on forestry do not apply. Referring to the drawbacks to good forestry in this country the author believes that much lies in the fact that there are a large number of small estates on which the extent of wood is too small to employ a skilled forester, and which are neglected accordingly. This is precisely our own opinion. We are told that German forests exist under climatic and geological conditions so similar to those of Great Britain and Ireland, that the advanced German systems can be completely applied in our isles; but while few would disagree with these opinions, we think that sufficient stress is not laid on the fact of the scattered and unconnected ownership of our home forests. While British forests are parcelled out into hundreds or thousands of properties, each owner having opposite desires and purposes to that of his neighbours, German forests, on the other hand, are enormously extensive, and are largely managed by Government. Mr. Simpson rightly points out that Continental forest officers are a much better trained class of men than British foresters are, and more thoroughly equipped in the theory and practice of their business. This again would result from their ampler opportunities.

The gamekeeper grievance is somewhat fully discussed, and what Mr. Simpson says must surely be fully corroborated by all who are in a position to form an opinion on the subject. He instances the barking of young trees by rabbits, and of the restrictions put upon the forester on the gamekeeper's side, owing to the breeding and rearing of pheasants. He suggests (and we endorse his remarks) that the forester should have absolute control over all forest lands; and that the woods and game departments might be combined, and managed under one intelligent and responsible head. These and kindred matters make this book valuable, as at least showing the average person the lines on which improvements will have to be made. Brown's "Forester" receives somewhat extended and severe criticism; and as "The Forester" has been the generally acknowledged exponent of British practice from times far back, the reader anxiously seeks for the advantages professed by "The New Forestry." Reduced to practice it is stated that "the new system consists in the division of the forest into areas and compartments, in which the timber crops are regulated on a strict rotation system, according to the species; in the reproduction of crops by seeds, or by plants raised in the forest nurseries from seed, and planted out small; in planting thickly, so as to cover the ground speedily; in crowding the trees judiciously at all stages, so as to secure height growth, and clean cylindrical trunks; and in thinning sparingly at long intervals." The rotation periods would differ according to the species of tree grown. "It is found that Scotch Fir and Spruce reach their most useful dimensions at one hundred years of age or thereabouts. Beech, mixed with other hard woods, is allowed one hundred and twenty-five years; and the Oak one hundred and fifty." The aversion to having capital locked up in standing timber (and its risks) for these long periods is another of the causes which deter the advance and improvement of British forestry, as English landowners seem to prefer speedy returns.

Mr. Simpson elsewhere in his book deals with the question of pure and mixed forests; where to plant timber trees; and the most suitable species for different situations. "Speaking generally," he says, "the rule for planting timber should be to plant where no other crop would be as valuable. This is practically the rule in Germany, the difference in that respect between that country and our own being marked. In the cultivated regions of Germany lying near the mountain ranges, where the climatic conditions are similar to our own, the best land is devoted to agricultural crops, no room being found even for fences, shelter belts, or hedgerow trees, and the farmer pushes his corn and other crops up the mountain side as far as he can do with advantage, and no further. Where his crops end the forest begins, the trees looking at a distance as if dovetailed into each other."

A chapter is devoted to an explanation of the general scheme of management throughout all woods on an estate. Good working plans provide a safeguard both to the proprietor and his agent, making the work easier and cheaper, and promote order in every department. To facilitate reference the whole of the wooded area should be mapped out on paper. "The words 'wood,' 'forest,' or 'plantation' should

be applied only to such planted tracts as are not separated by fields or fences, and the different divisions of such woods, whether distinguished by age or species, should be indicated in the register by letters of the alphabet." Examples of such maps and indexes are furnished in the book. The other points specially dealt with under this heading are:—1, Period of rotation; 2, choice of species suitable for the locality; 3, cultural methods to be adopted; 4, control and general management.

Altogether the book is essentially a useful one, and we trust that many of the principles it advocates may be practised by those in possession of smaller estates in this country.

Coniferae.

(Continued from page 179.)

Cupressus Lawsoniana.

It would be difficult, perhaps, to name a Conifer more widely known, or easily grown, than this. It is found in the valleys of Northern California, where it rises to a height of 100 feet, and was introduced into this country in 1854, seeds being sent to Messrs. Lawson of Edinburgh. This Cypress is perfectly hardy in our climate; it grows rapidly, is easily propagated, and seeds freely, producing cones in abundance. It is a handsome ornamental tree; the branches are numerous and well clothed with foliage; the leading annual shoots are drooping, slender, and regularly disposed, forming symmetrical pyramids of rich green spray, or graceful pillars of plumes and feathers, particularly pleasing when studded with the varying coloured catkins in spring and the cones in autumn. The latter are borne in great profusion, and are about the size of large Peas.

C. Lawsoniana is one of the best trees for the planter to take in hand. It is not particular as to the kind of soil, but appears to thrive best in rather a moist situation, is good to transplant, and may be used for almost every purpose for which Conifers are planted. It may be propagated with great rapidity either by seeds or cuttings. There are many varieties. Perhaps one of the most distinct is *erecta viridis*; the foliage is of a lighter and brighter green than the species. As its name implies, it is one of the erect forms, and has a tapering habit. There is a glaucous form, and one with quite a blue tint, *glaucocœrulea*. The young growths of some are white, others yellow, as well as variegated forms. There are also dwarf forms, such as *nana*, *nana alba*, and *nana glauca*. I am not quite sure about *Cupressus macrocarpa*, but have a tree that I believe to be *macrocarpa*. There are, I find, two forms of it, a spreading and an upright one. The one alluded to has the branches nearly erect, and the tree is broadly conical, and growing almost in the form of a bush. Two other interesting Cupresses are *C. funebris*, the Chinese funeral Cypress, and *C. sempervirens*, the upright Roman Cypress, but with these I am not familiar.

Pinus.

This is the most important genus of any belonging to the order, and perhaps the most valuable. One of the best known and most useful of all the Pines is *P. sylvestris*, the Scotch Pine. This is generally planted as a forest tree, but a few well grown specimens about the grounds or small clumps in the park are not to be despised. There are many forms, some of which are quite unsuitable for ornamental planting. Closely related to *P. sylvestris* is *P. montana*; indeed, it is said by some authorities to be a variety of it. It is also known as *P. Mughus* and *Pinus Pumilio*. It varies greatly in habit, according to the situation in which it is found. In very cold situations it is a dwarf shrub, whereas with more shelter it attains to the size of a low bushy tree. The leaves are dark green, it flowers early and produces cones abundantly. It is most useful for growing on banks, or wherever it is desirable to carpet the ground with a low growing shrub. It is sometimes necessary to peg the branches down in the first place. This plant will thrive in very cold and windy situations. The wood is very inflammable, and is used as torch-lights by the inhabitants of the countries where it is produced.

The Corsican Pine, *Pinus laricio*, is remarkable for its rapid growth when young, and it frequently attains the height of 140 feet. The leaves are from 4 to 6 inches long, of a dark shining green colour, often twisted, the branches are shorter and more upright than the Austrian Pine. It is a most useful and ornamental species, is not particular to the kind of soil, but it should be well drained, and it is quite hardy. This is a suitable tree for planting in maritime situations, high or low. No Pine is less exposed to the depredations of insects and vermin, or the attacks of fungi and other sources of injury to the trees of this genus.—PINUS.

(To be continued.)

* By John Simpson, Pawson & Brailsford, High Street and Norfolk Street, Sheffield.

Holland House, Kensington,

The Seat of the Right Hon. the Earl of Ilchester.



THE history of the beautiful and renowned residence whose several aspects are illustrated in the present spring number, takes us back to the halcyon days at the close of the great Queen Elizabeth's long reign. The "great lone Queen" died in 1603, and four years later, John Thorpe, the celebrated architect of the early Stuart period, had already [designed and was erecting Cope Castle, according to the instructions of

she would not again marry. But poor Dame Dorothie had a winsome heart, and widowhood was not for her. She married, and meanwhile had to abdicate Cope Castle, but returned to it on the death of her second husband. Sir Walter Cope's daughter and heiress, Isabel Cope, was the next possessor, and by marriage with her it became the property of Sir Henry Rich, created Lord Kensington in 1622, and Earl of Holland (from Holland in Lincolnshire) in 1624, one year before the death of James I. This is one of the earliest instances of an



THE EAST FRONT: HOLLAND HOUSE.

his patron, Sir Walter Cope of the Strand, "a knight of ancient family." This, the original name of the mansion now known as Holland House, was maintained till 1624. Old Sir Walter had exhibited splendid taste and judgment in choosing the commanding site that Holland House enjoys, for not even the incessant efforts of the enterprising builders, whose erections have now enswathed Holland House grounds, can destroy its noble dignity, its secluded repose, nor its distant perspectives.

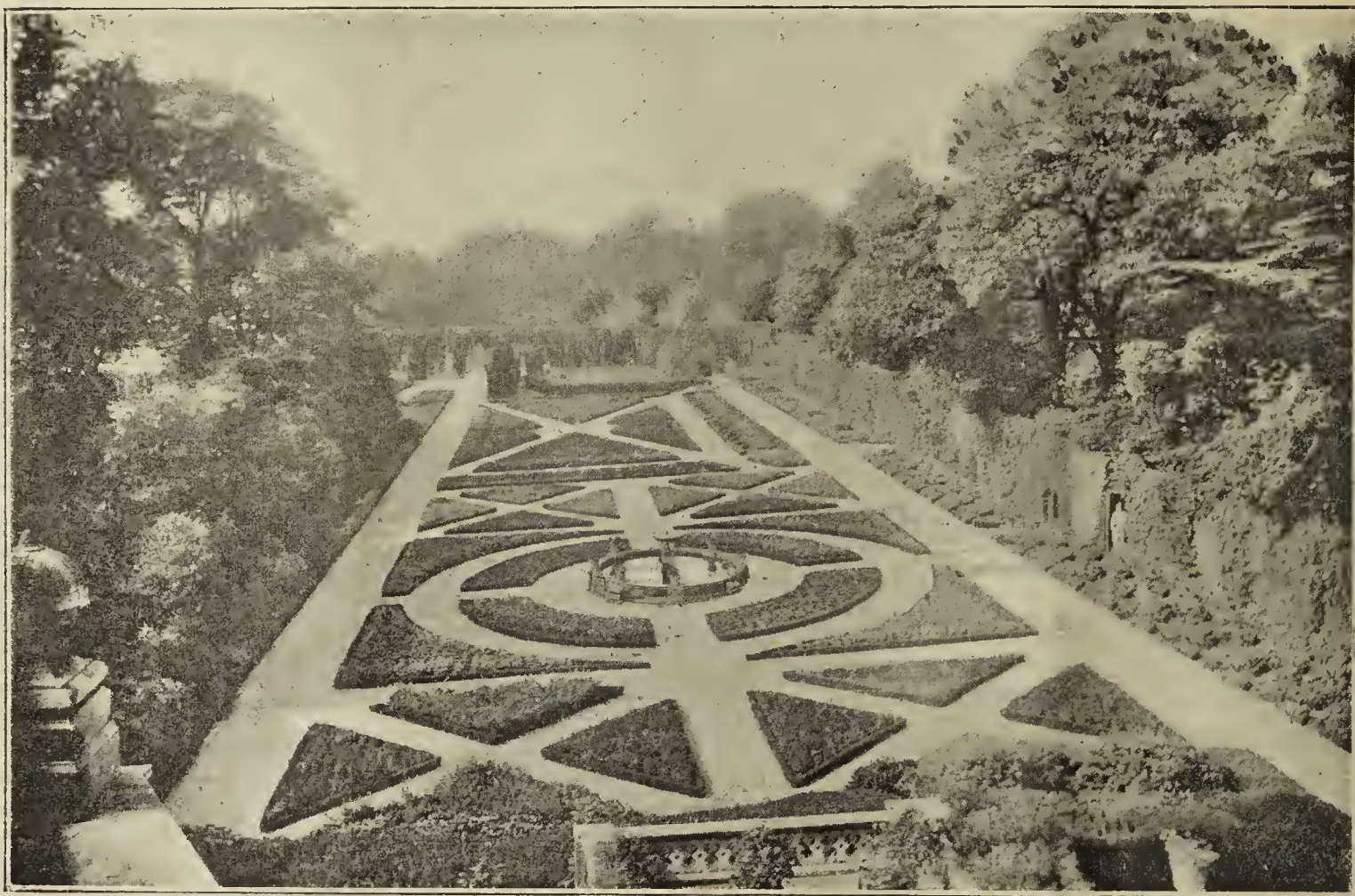
In those days prior to the Commonwealth, Kensington district was varied with picturesque farms, glebe lands, and orchards, as it was indeed, till long, long afterwards. In his will the founder of this grand old English home left it to Dame Dorothie, his wife, on condition that

earldom without a county. Earl Holland, younger son of Earl Warwick, was a prominent Royalist, and paid for his loyalty in being beheaded a few days after the execution of Charles I., on March 9th, 1649. During the next hundred years Holland House was occupied by various owners, among whom may be mentioned General Fairfax, one of Cromwell's officers, and indeed Cromwell himself lived here. Two years after the accession of King George I., that is, in 1716, Holland House passed into the hands of Addison by his union with Charlotte, Dowager Countess of Holland and Warwick. William Penn, the Quaker, who founded the State of Pennsylvania in America, and Van Dyck, the famous Dutch painter, were also erstwhile tenants. The social history of Holland House, however, may be said only to have really

begun when the Fox family became its possessors. The first Baron Holland (Henry Fox) was a nephew of the Earl of Ilchester, who was father to Pitts' great rival—namely, Charles James Fox, "the idol of his age," and who died in 1806. Stephen Fox, as eldest, was the next heir, and was succeeded by his son, Henry Richard, third Lord Holland. Most of the historic greatness of Holland House is due to the third Lord Holland, himself a prominent politician, and who espoused Elizabeth Vassall, one of the most remarkable women of last century. As the fourth Lord Holland had no family of his own, at his decease the estate passed to the present noble owner, the Right Honourable the Earl of Ilchester, who is head of the Fox-Strangways, the latter being the family name of the house of Ilchester.

If it were not that the open-air gardens of Holland House deserve an extended notice, I would be tempted to linger over the doings of the many universally interesting personages whose conjoint associations have formed the full story of this fame-blest edifice. Its atmosphere is laden with the memories and connections of such names as those of

Horticultural Society for its great spring show should the occasion ever require the society to rescind the Temple Gardens. Fellows of the Royal Horticultural Society are proud of the fact that Earl Ilchester is one of the newly appointed Councilmen of the society. Looking from the upper end of this large park the perspective extends away far over all the London streets and houses to the Surrey hills and to the well known Epsom Downs. Harrow-on-the-Hill can be seen miles to the west, but north and east the views are more restricted. Page 213 shows the east front with the entrance door to the mansion, which is led up to by a drive of about half a mile, planted on either side with fine old Elm trees. The climbing plant upon the walls is a species of *Vitis* (*Ampelopsis*). To the right one observes the handsome gateway designed by Inigo Jones. Both from the architect's and the garden-designer's point of view the presence of this gateway is commendable, for one's attention is thus directed to the structure of the mansion, and at the same time the interest is whetted to learn what lies on the north side. Here a great part of the surface is comparatively level, and a



THE DUTCH GARDEN.

Sheridan, Sydney Smith, Duc d'Orleans, afterwards Louis Phillippe, the two Humboldts, Tom Moore, Duke of Clarence, afterwards William IV., Washington Irving, Brougham, Thurlow, Sir Joshua Reynolds, Byron, Bentham, Sir Philip Francis, Macaulay, Southey, Hallam, Antony Canova, Sir H. Davy, Romilly, Kemble, Madame de Stael, and many others of this ilk. Within its walls the art treasures and mural decorations are almost beyond price; pictures, medallions, sculptures, valuable books and manuscripts, including amongst the latter the original letters of Petrarch; rare and unique collections of china, celebrated prints, and indeed articles whose connection with the illustrious dead of the centuries gone past endow them with a value inestimable.

The Pleasure Grounds.

Though the gardens that lie around Holland House are largely the creation of the present Earl and Lady Ilchester, it is evident from the fact of the first Dahlias being raised here on their introduction to this country, that the love of flowers and plants has also been one of the characteristics of the past owners. From the south front of the house a large rolling green park of 10 acres stretches outward to the boundary. This is the park promised by the Earl to the Royal

wide, open, spacious lawn sweeps right up to the broad path that runs next to the house. The effectiveness of this beautiful green lawn cannot be overestimated. This lawn loses itself in many grassy glades and vistas, and pure English gardening is here carried to perfection. Toward the north-west limits the grounds undulate, and the natural effectiveness of the varied contour has been increased by the addition of one or two Rhododendron dells, a large Bamboo and Japanese garden, numerous beds of Roses, Hydrangeas, Coluteas, Hibiscus, Asters, Lilliums, Dahlias, Sunflowers, Epilobiums, besides groups of Yuccas, rock beds filled with Opuntias, and in other favourable spots aquatic plants are cultivated. The Opuntias, with very slight protection, stand through the winter, while during summer Agaves, Phyllocacti, Dasylirions, Crassulas, and Gasterias bear the Opuntias company.

Hardy Plants and Aquatics.

The herbaceous borders are exceedingly interesting during the summer. The Day Lilies—*Hemerocallis fulva*, the tawny species, and *H. flava*, the bright yellow one, are found in touch with masses of *Gypsophila Stevensi*, which latter species is more popular here than *G. elegans*. The Red Valerian (*Centranthus ruber*) is splendidly

employed between the chinks of a steep, southward sloping brick wall. This phase of gardening is no more overlooked than any other section of outdoor embellishment at Holland House. Earl Ilchester is an enthusiast among plants, and his wishes are ably executed by his head gardener, Mr. Charles Dixon, who has superintended the gardens here for thirty-seven years.

The Dutch Garden.

Having made the circuit of the north side a gateway leads the visitor through to the west front and the Dutch garden, which is

(*Physianthus*) *albeus*, so called because bees and butterflies are trapped by the flowers. From a flat-roofed tower situated to the left of the Dutch garden a splendid view of a large portion of the grounds can be obtained. All our illustrations of the gardens are from photographs taken by Mr. Dixon. At present the head gardener is busily engaged in preparing a catalogue of the plant species cultivated here, a work that has been undertaken at Lady Holland's desire. The trees, shrubs, and plants of the Abbotsbury collection, in Dorsetshire, have been catalogued and issued in the form of a handsome little book. Abbotsbury and Melbury are country estates of Earl and Lady Ilchester.



THE WEST FRONT.

depicted on the page opposite. Here and there along the right hand wall statuary is placed. The beds are edged with tall Boxwood, and during summer they are filled with tuberous Begonias, bedding Pelargoniums, and such like. It was here in this garden that the earliest Dahlia first blossomed, which fact was commemorated by the third Lord Holland in a verse dedicated to his lady.

The Dahlia you brought to our isle
Your praises for ever shall speak;
'Mid gardens as sweet as your smile,
And in colours as bright as your cheek.

On the south wall to the right the Pomegranate flourishes, together with *Vitis rubrum*, *Wistarias*, *Magnolias*, *Clematis*, particularly the Traveller's Joy, and the Bladder Flower or Cruel Plant, *Araujia*

The Rock Garden.

In the rockery (including an effective "dripping brook," which runs off among the artificial boulders, and in its lower courses feeds a number of pools in the Japanese garden) we find fragrant beds of the purple-flowered *Thymus serpyllum*, the little yellow *Hippocrepis comosa*, the blue *Lithospermum prostratum*, the scarlet or orange red *Delphinium nudicaule*, and the sky blue *D. Belladonna*. *Ramondia pyrenaica* and its white variety are well established on perpendicular slopes, the tender *Linum arboreum*, the spreading *Veronica prostrata*, the useful *Sedum acre*, *Dianthus Napoleon III.*, *Brodiaea coccinea*, and a host of other plants, such as *Aubrietias*, *Saxifragas*, *Geums*, *Campanulas*, *Platycodon grandiflorum*, *Dicentra eximia*, *Globe-flowers*, and *Veronicas* are also established. Around the waterpools one finds the beautiful *Ranunculus*

Lingua, *Cyperus longus*, *Elymus arenarius*, the Rush-like *Cladius Mariscus*, *Scirpus lacustris*, *S. l. zebrinus*, *S. erectus*, *S. riparius*, *S. sylvatica*, *Menyanthes trifoliata*, the Bog Bean, Pond-flower, *Villarsia*, *Sagittarias*, *et hoc genus omne*.

Trees and Shrubs.

The value of trees and shrubs is thoroughly appreciated by his lordship, and a rich collection of hardy species has been amassed. Advanced arboriculturists around the precincts of London have a keen interest in the gardens of this demesne. Everything is planted in bold masses and groups. Tea and H.T. Roses flourish in numerous beds (laid out on the grass), and represent scores of varieties. They have proved to be perfectly hardy, and have almost entirely ousted the H.P.'s. The vistas with grassy walks, and bordered on either side with *Diervillas* (*Weigelas*), *Philadelphus grandiflorus*, *Brier* Roses, flowering Currants, and the like, are a specially beautiful feature. In many cases full collections of a genus are grown, as, for instance, *Hypericums*, (*Enotheras*, *Yuccas*, *Hollies* (*Paul's*), ornamental Crabs, and certainly a very large selection of rosaceous flowering trees and shrubs—that is, the *Prunus*, *Pyrus*, and *Rubus* tribes. In the Japanese garden, with its encircling screen of *Bambusa Stevensi*, we find *Hydrangeas*, *Liliums*, *Yuccas*, *Phormium tenax*, *Roses* galore, *Lantanas*, and other plants from the East, this garden being arranged after the "Willow pattern" design, which can be seen on millions of dinner plates and saucers. The Japanese garden is on sloping ground, down which a little stream meanders from the rock garden as already mentioned, and broadens out into a successive array of glittering pools. Stepping-stones have been placed in these pools, and the all-important rustic bridge—so conspicuous a feature of the design—is about to be added.

The Bamboos that have proved hardy include *B. violascens*, *B. aurea*, *B. Metake*, *B. palmata*, *B. Veitchi variegata*, and *B. viridiglaucenscens*. Amongst the lesser known shrubs, whose names we can alone mention here, are *Gymnocladus canadensis*, which is associated with such other pinnate-leaved specimens as *Pyrus Sorbus*, *Fraxinus excelsior tanacetifolia*, *Sophora japonica*, *Gleditschias*, *Robinias*, *Xanthoceras*, and *Pterocarya laevigata*. The best of the *Crataeguses* find a place; also *Laburnum Parkeri* and others; *Ptelia trifoliata*, *Cistus salvifolius*, *C. florentinus*, *C. laurifolius*, *Ceanothus grandiflorus*, *C. dentatus*, *C. Gloire de Versailles*, *Dimorphanthus mandschuricus*, *Broussonetia papyrifera*, *B. Kämpferi*, *Cytisus capitata*, and a host of other hardy trees and shrubs are to be seen.

South and West Fronts.

A glance at the view furnished to illustrate the west front, is sufficient to convey the impression to us of the luxuriant and truly gardenesque character of it. With its "intersections of walks adorned with statues, groves, evergreens, flowering shrubs, forest trees, basins, fountains, and sundials" it appears to present old Batty Langley's ideal of what part of a garden should be. The view of the fountain, the large Cedar tree, and the fine old house with its "turret chambers high" (page 217) also contributes to show something more of that old-fashioned mien which so predominates around the Ilchester home.

Though modern taste does not allow it to be literally true, Clare's picture of his own childhood's garden lends itself full well to describe the present garden on the western front. Of the beds and borders in the time of the third Lord and Lady Holland we can certainly use the old author's beautiful verse, and say that this is

Where the Marjoram once, and Sage, and Rue,
And Balm, and Mint and curled-leaved Parsley grew,
And double Marigolds, and silver Thyme,
And Pumpkins 'neath the window used to climb.
As lady's laces, Everlasting Peas;
True Love-lies-bleeding, with the hearts at ease;
And Golden-rods, and Tansy running high,
That o'er the pale-top, smiled on passers-by;
Flowers in that time which everyone would praise,
Though thrown like weeds from gardens now-a-days.



WISTARIA OVER AN ARCHWAY.

The antique dial-stone over which "the creeping shadows pass," is seen to have a place, and the handsome fountain which adds splendour and enlivenment to the scene is not wanting. The sight of water in motion is always pleasing and agreeable in garden views such as are shown in the illustration. On the south front, from which the finest view of the house can be obtained, Lord Ilchester is at present having another beautiful fountain designed from a plan by Mr. Dixon. A broad, level lawn faces the southward line of the mansion, and is terminated outward from it by an ornamental parapet, the two together forming a terrace. Beyond this stretch the great rolling acres of the park referred to earlier in this article. In the park numbers of long-horned, rugged Highland "kyloes" (cattle), graze, and present a picturesque spectacle to the gaze. Standard Myrtle and Sweet Bays are placed around an already existing fountain on the south front in summer.

The Green Lane.

In winter or in summer the Green Lane—an avenue of well grown, stout stemmed Elm trees, similar to those on either side of the entrance drive, with a broad grassy walk between—is one of the features of greatest beauty at Holland House. In winter the lane is often white with hoar frost, rather than green, but in the warm part of the year—in leafy June, the Green Lane affords a cool retreat from the ardent sun-rays.

Pergolas.

Throughout the demesne, both in the pleasure grounds and also on the north side of the vegetable garden, are long grass walks over-arched with rustic pergolas. These are erected from roughly hewn Spruce and Larch branches, of which some are thick while others are more slender. On many of these the Roses have yet to become established, but Roses, Clematis in great variety, species of *Vitis*, including the Grape Vine, *Wistarias*, *Honeysuckle*, *Jasmines*, and other free-growing hardy climbing plants have all been planted for training to the pergolas. Incidentally, it may be pointed out, that where grounds are at all inclined to be bald in appearance the introduction of these easily erected pergolas would relieve the bare effect. During recent years much has been written in favour of their adoption; and no doubt Miss Jekyll's book, wherein these are nicely described, has done much toward their greater introduction.

Hardy and Indoor Fruit.

A wonderful selection of hardy fruits are grown at Holland House, even though the conditions for culture are not of the best. Apples

crop well, the only drawback being that they do not colour so brightly as country grown fruits. I have thought it advisable and useful to obtain a list of those that do best, which are: Alexander, Bismarck, Blenheim Orange, Bramley's Seedling, Cox's Orange Pippin, Dumelow's Seedling, Ecklinville, Hawthornden, Bedfordshire Foundling, Irish Peach, Keswick Codlin, King of the Pippins, Lady Henniker, Lord Derby, Lord Suffield, Margil, Peasgood's Nonesuch, Pott's Seedling, Prince Albert, Ribston Pippin, Stirling Castle, Warner's King, W. E. Gladstone, Worcester Pearmain, and Yorkshire Greening, all of which are general favourites everywhere. Two years ago a piece of meadow and 4 acres in extent was planted with a collection of Apples and

well as could be expected. In reference to Walnuts and Filberts, Mr. Dixon naively added that fruits are secured when the crops are so great that the squirrels cannot steal them all.

The Glass Houses.

The indoor department is not very extensive. The Water Lily house contains a fine collection of these beautiful and popular aquatics; while forced plants and subjects for the flower garden during summer occupy some of the other structures. In a long conservatory adjoining the mansion there are some remarkable specimen Camellias planted



FOUNTAIN AND WEST SIDE.

Pears, which are all in healthy growth, and will soon be yielding good crops. The favourite Pears are Beurré Capiaumont, Beurré Diel, Beurré d'Amanlis, Easter Beurré, Duchesse d'Angoulême, Glou Morceau, Jargonelle, Louise Bonne of Jersey, Marie Louise, Passe Colmar, Williams' Bon Chrétien, Beurré Rance, Forelle, Napoleon, and Autumn Bergamot. The only varieties of Plums that can be relied upon, however, are Pond's Seedling, Victoria, Prince of Wales, and the Farleigh Damsons. Jefferson and Coe's Golden Drop yield a crop every year or two. Cherries are moderately successful, and here we find the well-known Black Tartarian, May Duke, Kentish Cherry, and the Morello, proving their worth for the town garden. Apricots have been given up long ago, but Peaches indoors do very well. Vines are also considerably grown. Bush and small fruits succeed quite as

out while round the walls are to be seen scores of plaster busts of celebrities. This is an aspect of part of Holland House grounds, which almost rival scenes at the Crystal Palace. Our small illustration effectively shows a pretty archway near the conservatory adorned with *Wistaria sinensis*. One side of the Lily pond garden is walled in by such arches.

But now we must leave this home of refinement, elegance, and grandeur, whose points of interest are so numerous as to have extended to two large quarto volumes when its history was written by Princess Marie Leichtenstein. Perhaps the R.H.S. spring show may yet be located here, whence thousands of the Journal readers will have an opportunity to study and enjoy the whole of the features of which I have only been able to describe a few.—J. HARRISON DICK.

Sunny Memories of Sutherland.

WHEN the days are dull and the air (as to-day) full of snow, and the nights long and dark, then is the time to recall with greatest zest the pleasant sunny hours of the past summer. How, in contrast with to-day, do they stand out in rich beauty and warmth, and our pleasure is keen when we dwell upon them. It is not often that we "stay-at-homes" get an outing so far away, and it is the very variety of the thing that makes it doubly precious. The "North countree" has always called us with a loud voice, and it is, perhaps, because we are of northern birth and lineage. There is something exhilarating about the north—breezy and bracing; but people do not, as a rule, associate Flora with "Caledonia stern and wild." For Flora they turn to Devonshire, or woo her in the pleasant lanes of the garden island, and it comes as a revelation to hear of the charms of Sutherland. Surely that is far north indeed! Yes; but we are apt to forget that not latitude alone affects vegetable growth. The soft west winds and warm Gulf Stream are very important factors, and where there are no great degrees of frost tender and delicate plants flourish, but not without due care. Tender and delicate plants are not indigenous to the soil; it is the land of Heather and Ling, but the imported treasures grow, and do well. Witness the Fuchsia covering the sides of the house; Hydrangeas and hardy Palms flourish as though at home.

Inverness to Dunrobin, a slow journey by the Highland Railway; but the variety is such that no passenger complains of lack of speed. Why hurry through the beautiful spots of earth? they come seldom enough indeed. Up and down hill, glimpses of coast line, mountain and snow, frequent halts at picturesque stations to pick up perhaps a single passenger, the journey is an ideal one. This might almost be called a ducal line, such was the fostering care bestowed on it by the late Duke of Sutherland, and his own private station is in the pleasure grounds.

The Highland crofter and the Irish peasant are much alike in their tastes and habits. No heed is paid to non-essentials, a few Potatoes, a patch of Oats, and a kaleyard; no attempt at gardening, no apparent love of the beautiful. Well, we suppose the situation on the "brae face," with the changing sea before and everlasting hills behind, are enough. There is an apathy about these people. There is the harvest of the sea, and over the herring catch they will be diligent, earning good money; but it seems these folk will hardly exert themselves at other times to supply the piscatorial wants of the "stranger within their gates," and the stranger is prepared to pay well for a change of diet. It is not that they are ignorant of the beauty of flowers, even of rare ones, for they have every chance daily of seeing the Dunrobin gardens, which with ducal liberality are open to the public at certain hours. We cannot understand it, for in England we generally find where a big and beautiful garden exists there are many equally beautiful small ones—there is a healthy rivalry all round.

As the family are in residence in the autumn the powers that be unite in making the place then appear at its very best. The Castle itself stands on a high grey rock, which runs pretty steeply down to a flat plateau clothed with living green, which in its turn reaches close up to the sea. The dark blue sea, the vivid green, the grey time-worn rock. There is one colour needed to fill in the scheme, and the gardener has hit the right note when he added the blazing Cactus Dahlia below the Castle terrace. What a happy inspiration! and how they flowered in riotous profusion, fairly bewildering to the eye. Can you imagine the effect, kind reader? It has to be seen to be believed. There are other arrangements equally beautiful, beds long and narrow, the centre filled with *Lobelia cardinalis*, with its handsome dark leaves, and surrounded by a wide border of blue *Salvia*, quite one of the most beautiful blues known.

It goes without saying that you find within these precincts all the beautiful autumn-flowering plants of which the names alone are bewildering. Old and new jostle each other, and their varied charms make a perfect whole. Soft and mild vegetation is much more luxuriant than in many an English county, and you can hardly realise you are so near John o' Groats and so far from King Lud. There is another beautiful flower which grows here in great profusion and loveliness. The *Tigridia* or *Ferraria*, closely related to the *Iris*; brilliant in colouring and very floriferous, many people compare it to the *Orchid*, at any rate it is a wonder it is not more grown, being quite at home in humble gardens, and rejoicing in a warm sunny border. The same remark applies to the *Lobelia cardinalis*, that does not receive the attention it should do. Our skies are often grey, and we need bits of vivid colour to supply the necessary warmth.

To anyone weary of the harass and bustle of the town we should recommend a visit to Sutherland in the autumn. If there is an invitation to Dunrobin, well and good; if not, there are other humbler dwellings where the Sassenach would find a welcome, and he could revel in all the beauties of mountain, sea, and glen, and the lovely Castle gardens. The Duke can do no more.—THE MISSUS.

The Pruning of Hardy Trees and Shrubs.

THE attention of many persons interested in arboriculture and sylviculture has during the last few years been specially directed towards the systematic pruning of hardy trees and shrubs, and without exception they agree that judicious pruning is not only advantageous, but absolutely necessary if the best possible results are to be obtained. That gardeners as a body are not fully alive to the fact that by proper pruning their trees and shrubs will not only grow quicker, but will make better specimens and flower more freely, is in evidence on every hand by the large number of prematurely old and ruined trees to be seen only too often, and by the number of shrubs which flower anything but satisfactorily through want of attention from the pruner. A gardener knows well that to obtain good crops of fruit of first-rate quality he must properly prune his trees or bushes, and he is careful to impress that fact on all the young gardeners he trains; yet how rarely do we find a gardener who advises his young men to give ornamental trees and shrubs similar attention.

Although the methods adopted in the two divisions—fruit and ornamental trees—necessarily differ, the same end is aimed at—viz., the suppression of certain parts to promote the building up of others which the cultivator thinks desirable for the healthy development of the tree in the form he prefers. In the one case the principal object aimed at is fruit of good quality, and to obtain this it is often necessary to dwarf the tree by prematurely checking its growth. In the other case the object to attain is the best possible specimen in the shortest possible time, and this can only be got by making the tree grow as freely as possible. In a paper such as this it is only possible to direct attention to the matter by comparisons between pruned and unpruned plants, and by giving details as to the manner in which the work should be carried out. A pruner, to be successful, must have practical experience, for no matter how many papers a man hears, or how much theoretical knowledge he gains from books, he will find that he must do the work himself before he is master of it. Differences of aspect, soil, locality, and stock—if the plant has been worked—have to be taken into consideration, making it a difficult matter for anyone to lay down a hard and fast rule to go by. Suggestions can be made, but it is necessary for the operator to study his plants and his local surroundings to enable him to give the exact amount of pruning necessary. Failures may often be traced to insufficient attention being paid to details such as those mentioned, and especially by pruning without having a personal knowledge of the plants. From this it will be readily understood why gardeners are urged to give the subject their full attention.

Pruning of Trees.

The pruning of trees may be placed under several heads in accordance with the object aimed at, as for instance the pruning of timber trees grown in woods, &c., of forest and ornamental trees as isolated specimens, or of trees for the production of flowers. As each of these requires different treatment they will be dealt with separately, after a few details have been given, which apply to all alike. As in the case of fruit trees, pruning should be practised from babyhood. By paying attention to the work while the trees are in the nursery a great saving of labour in their after life can be effected. In addition, they can be transferred to permanent quarters in much less time than if no pruning be done. The first aim should be a good, straight, strong, leading shoot, which should keep well above surrounding branches until the tree approaches maturity. It is no use whatever leaving an ill-shaped young tree to its own devices. It requires surgical treatment quite as much as a deformed child, and if properly treated when young will, in many instances, outgrow its deformity in the same way as the child.

When commencing to prune a tree it is advisable to begin at the top and work downwards; by this means the desired result is more easily obtained than if the work is commenced from the bottom. When possible it is better to take branches clean out than to simply shorten them. If they cannot be removed altogether they should be cut to a back branch, by which means the wound heals quicker and the tree looks more presentable. When shortening branches it is advisable to make oblique cuts in preference to straight ones. When removing a branch altogether, the cuts should be made parallel with and well against the trunk—not at right angles with it. Cuts such as the ones recommended heal best, and show little signs of the union between old and new wood, an important item when the tree becomes timber. If a branch is sawn off at right angles with the trunk the wound rarely, if ever, heals properly, a portion of the wood dies

and the young wood rarely grows over it. In time the dead portion decays and forms a channel for disease which would not have been had the cut been made the other way.

When cutting off or shortening a branch a cut should first be made underneath, so that when cut from above the weight when falling will not tear the bark off the trunk or portion left. If a large heavy branch has to be taken off, it should first be lightened by sawing it off 2 or 3 feet from the trunk; this will minimise the chances of accidents, either of falling against and overthrowing the operator and his ladder, or by falling prematurely and injuring the tree. It is also a good plan to sling heavy branches by means of a rope passed over an upper branch; by this means injury to undergrowth may be avoided. Cuts should always be made clean and well into the wood, snagged branches being one of the worst evils attending bad pruning. Snags die and decay, thus forming a ready means for fungoid and other diseases to reach the heart of the tree.

As soon as a tree or shrub has been pruned, all wounds should have any roughness pared smooth and be dressed with Stockholm or coal tar, which forms a good protection against the inclemencies of the weather and the entrance of fungoid pests, until they are healed over. Damaged bark or wounds of any description should be cleaned and pared smooth, and treated as other wounds. Decayed parts of trees may be scraped clean, and have several dressings of Condy's fluid or a fairly strong solution of carbolic acid, after which a dressing of tar should be applied. All prunings should be gathered up and cleared away at once, for if left lying about, in addition to being unsightly, they rapidly decay, and form an excellent medium for the propagation of fungoid diseases, a matter which cannot be given too much attention. If trees are to be formed into fine specimens, and be of value when mature for timber, it is of the utmost importance that no means should be neglected by which fungoid pests can be kept away, or their injurious effects reduced to the lowest possible minimum. A great point is to have good tools, and keep them clean and sharp. The requisite tools are saws of various sizes, standard pruners, choppers, axes, knife, light steps, ladders, &c.—W. DALLIMORE.

(To be continued.)

Lasiandra macrantha.

HERE we have one of the handsomest and most beautiful of all greenhouse or conservatory climbers. The plant is amenable to all kinds of treatment, for I have grown it when the roots were cramped, and often hungered; while again I have seen massively spreading plants with the full root run of a good border. The plant always furnishes abundance of young wood, and under some conditions it has a tendency to become straggly. The flowers are borne in clusters of four or five, while successive buds continue to open over a lengthened period. By the adoption of a winter system of pruning or thinning out of old wood *L. macrantha* can be flowered during the dark month of December. The accompanying illustration admirably portrays the character of one of the violet-blue flowers, but whole clusters of equally large or larger flowers are usually produced by the plants. As will be

seen, the leaves and the stems are slightly downy. The former are dark green and entire. As a climbing plant or as a trained pot specimen this fine old-fashioned flower deserves more attention than it receives. A temperature ranging between 50° and 60° suits it well. It can be raised from cuttings or from seeds, and ordinary yellow loam with a slight addition of peat, should be afforded as a potting compost. *Tibouchina* and *Pleroma* are generic names that are used, but are not so well known as *Lasiandra*.—K.

Seakale Lilywhite.

I HAVE been remarkably impressed this winter with the superiority of Lilywhite Seakale for forcing. I believe this is quite contrary to the general experience of most gardeners. I first noticed the habit this plant had of comparatively early ripening on this cold ground of ours. They were quite destitute of foliage at least a fortnight before the ordinary kind, both sorts being planted on the same day and side by side. Seeing this habit of early ripening, which was more pronounced last autumn, there being no frost here to cause a premature decay of the foliage, I naturally thought they would start a trifle earlier when introduced into heat than those plants which retained their foliage for some little time longer.

After the foliage had parted from the crowns, the roots were taken up and exposed to the weather, and when a portion of them were put into heat at the end of November, they came away slowly but strong, and certainly more delicate in colour than that of the ordinary variety.

Many connoisseurs say it is superior in flavour to the old variety. Whether this is so I am not able to say. This variety pays for a little extra care and attention when growing in its summer quarters, by giving it a good deep and rich

root-run; it will then produce crowns as large as the more common sorts.

As the planting season is at hand the following remarks will not be out of place. Our root cuttings have been made some time, and are now buried in the ground, waiting for the soil to become workable, when they will be immediately planted. Our plan is to draw shallow drills about 18 inches from row to row, and with a dibble make holes about 16 inches apart and drop a cutting into each hole, taking care it rests on the bottom of the hole. The crown end of the cutting is left level with the bottom of the drill. Then I like to put about 2 inches of refuse from our smother heap directly over the crown end of the cutting. I find by doing this the crowns are comparatively free from injury by slugs. As soon as the cutting sprouts are about 2 inches above ground we go carefully over and remove all but the strongest, which is then encouraged to make rapid growth.

If the ground is of a dry and sandy nature the plants would be greatly benefited by an occasional dusting of salt between the rows while growing; but on our ground I find it best omitted. If space could be spared I should prefer to plant the rows 2½ feet wide and 18 inches from plant to plant, but for want of ground I cannot spare them this breathing room.—J. EASTER, *Nostell Priory Gardens*.



LASIANDRA MACRANTHA.



Rose Show Fixtures in 1901.

- June 12th (Wednesday).—York†.
 „ 26th (Wednesday).—Richmond (Surrey), N.R.S.
 „ 29th (Saturday).—Canterbury and Windsor.
 July 2nd (Tuesday).—Drill Hall (R.H.S.) and Southampton*.
 „ 3rd (Wednesday).—Hanley*.
 „ 4th (Thursday).—Temple Gardens (N.R.S.).
 „ 9th (Tuesday).—Gloucester, Harrow, and Woverhampton†.
 „ 10th (Wednesday).—Worthing.
 „ 11th (Thursday).—Bath, Brentwood, Eltham, Helensburgh, and Woodbridge.
 „ 17th (Wednesday).—Ulverston (N.R.S.) and Cardiff*.
 „ 18th (Thursday).—Halifax.
 „ 20th (Saturday).—Newton Mearns.
 „ 23rd (Tuesday).—Tibshelf.

* Shows lasting two days. † Shows lasting three days.

The above are the only fixtures definitely arranged that have as yet reached me. I shall be glad to receive the dates of other Rose shows (or horticultural exhibitions where Roses form a leading feature) for insertion in future lists.—EDW. MAWLEY, *Rosebank, Berkhamsted, Herts.*

Pruning Newly Planted Climbing Roses.

ROSES, with stems 6 feet or so in length, which were lifted from the open ground some short while back and planted as climbers, should have these stems cut hard back in order to secure good growth and flowering wood for the coming year. We planted some Roses in the autumn. They had grown vigorously in the nursery, producing stems 5 feet to 8 feet long, but the roots had been wretchedly treated, and when received were not a foot in length. As there would be danger of those few roots failing to supply such a well-developed branch system, we therefore cut the stems down to 2 feet or less at the time of planting; and now the top buds on the shortened stems are pushing from half an inch to an inch in length. But as we do not want these very early shoots, and as they may yet be caught by frost, we shall cut the stems still further back to bold dormant buds from 6 inches to a foot from the ground. The root-force is thus concentrated on these few later buds, and we can reasonably expect them to produce strong growths during the season. On the other hand, had the last season's stems been left their full length we would have had puny growths, or none at all. It is not necessary to cut back so closely those Roses that have been grown in pots for a season, because practically all the roots can be preserved when planting, but even then cutting the stems back closely is mostly advantageous.—G. A.

Bedding Roses.

WHILE the H.P.'s, and more recently the Teas and H. Teas, have been included liberally in all gardens, the dwarf China Roses and the suitable bedding Briers have been less freely planted. Yet when the Chinas and the dwarfer Briers are employed in massed beds the richness and enlivened aspect of the garden well repays for the expense and trouble incurred. One can never plant too many Roses; they are ever fresh and beautiful. The essentials of a good bedding Rose are chiefly vividness of bloom, free-flowering and long-lasting qualities, with the power to continue in a satisfactory state year after year. No colour is richer or more suitable in massing than crimson. Ducher is one of the best bedding Roses; Mab is another good one, and Mrs. Bosanquet must also be included. The varieties of China Roses have been increased by some splendid introductions during recent years, all more or less suitable for pure bedding. An open aspect is generally or always commendable, and where beds can be laid out on grass near the dwelling-house, or a rustic pavilion or other retreat in the grounds, surely few features could be arranged to surpass the excellent effect that these furnish. We have found that such climbing Roses as Red and White Pet, Crimson Rambler, and others, are marvellously fine plants in large beds, say 10 feet through, when the system of pegging down the strong shoots is resorted to. This is a method of culture not fully known—or such would appear to be the case from the few instances in which one sees it practised. Very strong-growing Hybrid Perpetuals can be admirably treated in this way. Where very large exhibition blooms are desired it is always recognised as best to prune hard back, but if a profusion of flowers are rather preferred it is certainly the wiser plan to adopt the pegging-down method. Borders do not always allow of this being done, but where there are full beds of one variety it could well be oftener attempted.—K.

Javanese Rhododendrons.

THE beautiful sections of intermediate house Rhododendrons, which come under the general title of Javanese Rhododendrons, have been raised by the crossing of a few species native to the Malay peninsula and the islands of the neighbouring archipelago. Messrs. James Veitch and Sons, Ltd., Chelsea, have had the honour of introducing both the original species and the splendid hybrids which have resulted in their hands. During the whole of the winter season each Drill Hall show of the Royal Horticultural Society is brightened by an exhibition of exquisite blooms from the Chelsea stock. We know for a fact that Messrs. Veitch have had thirty-five varieties in bloom at Christmas. The essay on this section of the Rhododendron, which we are pleased to be able to furnish, was written by Mr. F. S. Sillitoe, who has had practical experience with the Chelsea plants themselves, under Mr. John Heal, V.M.H. The paper was read before the Kew Gardeners' Mutual Improvement Association in January, this year, as follows:—

The Javanese Rhododendrons inhabit the warmer climates of the Malay archipelago, and one must accordingly allow them a temperature and atmosphere to suit their requirements. This is where many fail to cultivate this section successfully. They are termed "greenhouse Rhododendrons," but, properly speaking, a warm greenhouse should be accorded—i.e., 50° to 60° in winter, and above all a moist atmosphere at all seasons is necessary. During hot summer days syringing the houses three times is not too much, closing the house after the last syringing, and in spring when young growth commences air must be given sparingly, especially top air, though towards autumn when the wood is ripening more may be given. It is not wise to prune these Rhododendrons hard. When a plant has become leggy do not cut it, but bend it as much as possible without splitting, and tie the shoots into position. Young buds soon start into growth, and if this growth is kept pinched and tied into place a bushy plant is soon grown. Propagation is effected by seeds and cuttings, not by grafting, for no suitable stocks, I believe, can be found. Cuttings of the ripened growth of the past season are taken in late autumn, and are potted singly into thumb pots. The young roots must not be disturbed in the first shift more than is necessary. Employ fine peat and sand, and place them in a good bottom heat, and keep rather moist, though a fungus which turns parts of the leaf brown makes its appearance if the soil is kept too wet. This must be cut out at once, for it spreads very rapidly. Keep the plants well shaded, placing brown paper or tiffany over the cases as well as outside blinds, and never let any become dry, for if they flag they seldom recover.

This section, as it is represented to-day in our gardens, is one of the finest examples of the hybridist's skill and patience that one can point to. I might mention here that this section does not seem in any way troubled by the dreadful fogs and weeks of the usual winter gloom that are experienced every year near the metropolis, while the Himalayan and Azaleas—especially indica—section, which are imported from Holland by the thousand every winter to brighten the conservatories, are stripped of their foliage if not thoroughly established.

A few remarks on the flower may not be out of place. The Rhododendron belongs to a sub-order of the Ericaceae, and the flowers are not adapted for wind pollination, for we notice that the pollen is not dust-like as in many flowers, but forms threads. The pollen grains on leaving the mother cells do not separate, but remain together and form tetrads, and these leave the anther cavities in this condition; but all these tetrads are also joined by a substance termed viscin, which is supposed to be formed from the broken down walls of the mother cells. The anthers open by a terminal pore, as in Erica, but in Erica the pollen is discharged, and the anther has a hair-like appendage which is absent in Rhododendron. A large and prominent stigma, which is very sticky, often fertilised by the corolla partly falling off, and hanging attached to this till ripe for pollination, as the plant is protandrous, though more often fertilised by insects. The fruit is a woody capsule, taking several weeks to ripen, and contains very small seeds. There are one or two striking differences between this section and that of the Himalayan species. No pure yellow has been produced in the latter, while in this, since the introduction of Teysmanni, several hybrids of the most beautiful yellow and orange shades have resulted (see page 221).

The flowers are mostly of a tubular form, especially those with *R. jasminiflorum* in their parentage. Furthermore, they are generally of a true self colour, and have no scent; while the Himalayan have large open campanulate corollas. Many are sweetly scented, and have deep spots or blotches on their throats. Great difficulty has been found in crossing these with the Himalayan species, only one hybrid having been secured, and that was between *R. Princess Royal* (Javanese) and *R. Aucklandi*. The hybrid was named Pearl, a variety with white flowers of *R. Princess Royal* shape, so that *R. Aucklandi* neutralises the pink of *R. Princess Royal*, but it did not alter the form of the flower. Another curious cross was between *R. J.-j. var. Lord Wolseley* and *Azalea indica var. Stella*, which, though sown in 1883,

is only now 6 inches high. It is in good health, but has no signs of flowering.

As perhaps a few words on the introduction and subsequent crossing of the present race of Java hybrids would be interesting, I will endeavour to trace a few of them. This section is divided into four groups:—1, Javanico-jasminiflorum; 2, Balsaminæflorum; 3, Malayanum; and 4, Multicolor. All the scores of varieties in these sections have been raised from the following seven species:—*R. jasminiflorum*, introduced by Lobb in 1849 from Mt. Ophir, and shown in 1850 at a Chiswick show, where it caused a great amount of interest; also *R. javanicum*, Lobbi, *Teysmanni*, *Brookeanum*, *Malayanum*, and *Multicolor*. All these, except *javanicum*, were introduced by the firm of Messrs. Veitch and Sons, Ltd., through their travellers Lobb and Curtis, and by their able hybridist Mr. J. Heal.

though the colour is much improved, as also is the form. Throughout, those crossed with Lobbi and *Brookeanum* gracile range in colour from white to pink, and on to red in varying shades. For the many exquisite yellows we have to look to *Teysmanni*, introduced from Sumatra by Lobb. The species itself is a bad pot plant, though a good parent. *Ceres*, one of the first raised (*Teysmanni* × *javanicum*), is a fine variety, the seeds of which were sown in 1886 and flowered in 1891; but still finer is *Exquisite*, from the same parents, because of its bright red anthers and clear colour.

The following varieties can be recommended as having large and freely produced flowers. *White*.—*Princess Alexandra* and *Purity*. *Pink*.—*Luteo-roseum*, *P. Royal*, *Taylori*, and *Aphrodite*. *Red and Orange Shades*.—*Brilliant*, *Diadem*, *Hercules*, which affords the finest trusses and largest flowers of the group; *Souvenir J. H. Mangles*, and *President*. *Yellow*.—*Ariel*, *Exquisite*, and *Cloth of Gold* (*R. Lord*



RHODODENDRON CLOTH OF GOLD.

Javanico-jasminiflorum.

This is the largest section of the Javanese Rhododendrons, numbering sixty or more varieties, that have been distributed and found worthy of cultivation. As seen by the name, these are the progeny of the two species, *R. javanicum* and *R. jasminiflorum*. In crossing, it is found that better results are obtained by using a true species as one of the parents than with two hybrids, and that the character of the female often smothers that of the male. It is curious to note that no incisions of the leaf have as yet appeared, though great uncertainty as to colour and size of flower originate from the same seed pods.

The first hybrid raised in 1850 was *Princess Royal*, between the above named species, in which we see that a white and an orange red result in giving a pink variety with the *jasminiflorum* form predominating; the same in *R. J.-j. var. carminatum* (a sister hybrid),

Wolseley × *R. Teysmanni*), which we herewith illustrate. It received an award of merit on November 24th, 1896. The same floriferous trusses of brilliantly coloured blooms are produced by all these warm greenhouse Rhododendrons, and as they are chiefly winter-flowering, their worth cannot well be over-estimated.

Malayanum Section.

The species was introduced by Lobb in 1854, and has small red flowers and leaves covered with reddish-brown hairs beneath. As yet there is only one hybrid with this species, named *Little Beauty*, a cross between *R. Monarch* and *R. Malayanum*. It differs little from the species beyond making a more compact bush, and has brighter flowers freely produced. This *Little Beauty* has five out of the seven species before mentioned in its parentage, *Teysmanni* and multicolor being absent.—F. S. SILLITOE.

Fruit in Devonshire.

At a recent meeting of the Devon and Exeter Horticultural Society Mr. F. J. Fletcher expressed his views on the prospects of hard fruit growing in Devonshire. Mr. Fletcher said that at one time the idea got abroad that the farmer had only to plant a few acres of fruit trees and a golden harvest would inevitably result. On the other hand there were not wanting pessimists who filled the columns of our great daily papers with their wailings that English fruit growing was all a ghastly mistake, that English fruit was a drug upon the market and would not pay for the gathering. The one statement is, perhaps, but the natural consequence of the other, and neither is right. The latter is not only an emphatic discouragement to a great industry, but is also absurd in that it does not discriminate between fruit and fruit, but places it all upon the lowest level. The former is mischievous and delusive, and the trade is suffering now, and will suffer more yet, through the action of those who, without the technical knowledge necessary to success, swallowed the bait. Mr. Fletcher wished to make this point quite clear; and calls to mind now, not one, but several, orchards planted as the result of this agitation, say ten years ago, without any proper preparation of the soil, without any reference to varieties, and without the care of anyone who possessed a knowledge of tree culture. This has spelt two things—failure and condemnation; for many of the trees are no longer now than when planted; others have cankered and have been rooted up, and others, where the natural conditions happened to be more favourable, have grown and yielded crops of an indifferent sample and of unprofitable varieties.

Now, is English fruit a drug upon the market? It is, and it is not. There is so much fruit, principally Apples and Pears, produced in this country from old and badly cultivated trees that the majority—yes, the majority of it—is, to say the least, very moderate indeed. The variety may be a good one—possibly Ribstons or Blenheim Orange, or Williams' or Marie Louise Pear—but the size and appearance of the fruit is so much below par that so long as better and more attractive samples can be bought, whether English or foreign, the buyers take that in preference, and the bulk of ordinary fruit is undoubtedly a drug. But can we blame the buyers for that? Of course not, for they have to cater for a fastidious public, and are often driven in their own interests to refuse the English and purchase the foreign parcels, every fruit in which has been specially selected for their trade. Practical gardeners know that as regards our hardy fruit, when it has been properly cultivated and selected, there is no fruit grown under the heavens that can compare with it for quality.

Devon has long had the reputation of a fruit county, the soil and the climate being peculiarly favourable, and choice varieties of Apples and Pears growing here vigorous and prolific, are considered up country as bad growers and delicate. But Mr. Fletcher regretted to say that in this celebrated Apple county he had scarcely come across a really up-to-date orchard such as one sees in Kent.

Taking the cider orchards as a test, and in spite of all that has been said and written to the contrary, fruit growing is not an agricultural but a horticultural subject. Those who would produce fruit of a high grade (and really no other is worth considering) must possess a special knowledge of fruit culture only to be obtained by an arduous training under a specialist either in the nursery or in a first-class garden.

The only orchards coming under the lecturer's observation that retrieve the good name of Devon are worked by a few up-to-date market gardeners, and these are no doubt increasing year by year, but even in their case there is a lack of science, and they are inclined to plant their trees and bushes too close together. Mr. Fletcher then referred to the fruit grown at Poltimore and Crediton, which, he said, would stand second to none in the world. It is not only the best of the larger fruits that can be grown to especial advantage in Devon, but the smaller and softer fruits as well. The southern sunny slopes of South Devon offer a splendid field for enterprise to any good grower who will lay himself out to grow Strawberries.

The deep rich soils which abound in so many parts of Devon are particularly adapted for the production of heavy and profitable crops of bush fruits, and Raspberries and Blackberries.

Of the bush fruits the most profitable is undoubtedly the Gooseberry, its season commencing early in May with the green berries and winding up in July with the ripe ones, so that if due attention is paid to the selection of good early varieties the climatic conditions are again a distinct advantage. Having shown—first, that Devonshire is naturally a good fruit-producing county, much more so than many counties; secondly, that the natural advantages it affords are not taken up as they could and should be; thirdly, that from a commercial point of view there is abundant scope for enterprise and the prospect of a profitable return upon the expenditure of capital, Mr. Fletcher had a few words to say about soils, and then he mentioned a few points absolutely necessary to success. There must be a thorough knowledge of trees, how to feed and prune them, and how to destroy pests. As to situation, most of the sunny southern and western slopes of the county offer all that can be desired, and provide natural drainage. Of course, the proper preparation of the soil for fruit growing is important. Then the question, "What shall we plant?" was one that must be answered carefully. Good trees and good varieties was the general answer. Mr. Fletcher gave details as to the best sorts. Early

and late varieties are the most profitable, as they could go into the market when there is the least competition. And only selected fruit should be put into the market. Having dealt with tree fruits, Mr. Fletcher had something to say on bush and other small fruits. He believed most heartily in the prospect of fruit culture, and he believed it would do much towards replacing the best class of workers back on the land, and relieve agricultural distress.

Table Decoration.

THE above heading refers to the floral decorations of the dining room table adopted in large establishments when distinguished visitors are being entertained, and also at public dinners and banquets. In these cases sometimes the floral display is somewhat extensive. There is no hard and fast rule to be followed in the decorations. The first thing is to know the size of table, and then to decide on what is to be done, so as to impart a light and artistic gracefulness, for generally this task is more or less keenly criticised. Various arrangements can be made, most of which depend upon the time and season of the year. For instance, a large table can be made to have a pleasing effect when adorned with choice foliage plants, with or without tracing as desired. Again, a bank of flowering plants—viz., Gloxinias or Orchids, can be used along with cut flowers and scroll work. If a bank of Gloxinias is decided upon, a sheet or newspaper should be laid on the clean tablecloth to prevent soiling the same. Then should come the arranging of the plants, which should be formed so as not to appear in straight lines, and to give them a more natural effect. Some should be raised higher than the others. Use a few small pots to raise them to the desired height. After the plants have been satisfactorily arranged, the whole should be carefully filled in with prepared moss, the outside line of which should not be straight, but be of a winding nature. The moss can then be covered with ordinary *Adiantum* fronds to give it a more finished appearance. The common *Hypericum* foliage can also be used, or *Berberis Aquifolium*. For another occasion a table of Roses could be set up by first forming the bank of moss, after which the whole should be covered with Rose foliage. Cut the Roses with long stems to allow for sticking into the moss. Some of the Roses should be higher than others, but each must have space to allow for filling in with Rose shoots. When finished dew the blooms over with a fine spray, to impart a cool and refreshing appearance. One or more colours can be used, according to taste.

Another nice cool table can be attained by foliage plants. *Caladiums*, for instance, generally placed in silver baskets or vases on the table, are beautiful. The centrepiece should be filled with the tallest plants, and the others arranged in proportion about the table. More than one variety may be used. The *C. argyrites* type is admirably adapted for corner baskets or vases. To give the table a more finished appearance *Myrsiphyllum asparagoides*, *Lygodium scandens*, or any other suitable trailing greenery can be used, but it should be laid on as lightly as possible. For tables the baskets should first be filled with moss or sand, then filled with blooms of Orchids, Carnations, Roses, *Allamandas*, or such flowers that are at hand, filled in either with Fern or own foliage.

For large tables, when gold or silver table sets are used, which generally contain a centrepiece and vases, nice graceful *Crotons* can be used, together with *Dracaenas*, *Pandanus*, *Cocos*, *Eulalias*, and various other plants. In such cases a suitable plant should be chosen for the centre, and each end should be filled in with smaller plants, the number of which should be decided upon according to the size of table. Glasses of cut flowers may then be placed about and the table done up with *Asparagus*, or it can be done in designs, such as double diamonds, heart shapes, triangles, stars. The different *Selaginellas* afford excellent trailing material, so also does *Ficus repens*, *Ampelopsis Veitchi*, and *A. quinquefolia*, varieties of *Loniceras*, especially the variegated one, and various sorts of coloured leaves; even the dry leaves of Oak make a pleasing effect. Small blooms to harmonise may be placed lightly amongst the trailing material to give a brighter effect. When the vases of centrepieces have to be filled with cut flowers, first fill in silver sand, damp enough to make it set, to steady the blooms and Grasses and Ferns. Place moss on the surface soil of the pots, and pieces of paper beneath them. When moss is being used for mounds, it should be washed and then dried, to give it a clean and fresher appearance and to rid it of all insects. In the arranging of flowers and plants on the table due consideration should be taken in regard to the dishes of dessert and the number of them that are on the table. When lamps or candlesticks are used on the table strings of *Lygodium* or *Smilax* can be fastened to the centrepiece and made to hang chain-like between the end candlesticks, finishing by winding round the lamp down to the table. "Trailing" should hang or entwine down the centrepiece as the case may demand. Avoid overcrowding or heaviness, and allow for free conversation to be indulged in across the table. When the table is completed see that no pieces are left lying about, either on the table or carpet.—G. P.



Loquat Trees have a particularly vigorous and healthy growth, and begin fruiting quite early, generally the second year of planting. The fruits ripen towards the end of October and beginning of November; it is thus a mid-season Loquat, but as regards size and appearance, one of the best in cultivation. The fruit is large, egg-shaped, 2 inches long and $1\frac{1}{2}$ inch broad; ten average fruit turned the scale at a pound. In size it may be compared to a good sample Apricot. In colour it is yellow, tinted amber on the side exposed to the sun; the flesh is juicy, sugary, and pleasant in flavour.

Forced Strawberries.—The present supply of forced Strawberries now on sale in Covent Garden Market meets a ready demand, so much so that prices range from 12s. to 24s. a pound—that is, from 9d. to 1s. 6d. per ounce. These are extraordinary prices, when it is remembered that giant-berried Gros Colman Grapes from English forcing houses are selling as low as 9d. to 1s. per pound. The Strawberries that have made 2s. per ounce were Royal Sovereign. The fruits are of enormous size, and of a lovely red colour. Some of the best forced Strawberries and Gros Colman Grapes of English growth are regularly sent to the Paris market for sale.

Irish Seed Testing Station.—The new Board of Agriculture intend starting a seed-testing establishment, testing seeds in respect of purity, percentage of germination to be determined, true value, germinating energy, and lastly, the pedigree. The period of seed-testing:—The department will require three weeks as the furthest for the completion of their examination, but after the lapse of a week an interim report will be sent awaiting the complete statement of results. The fees range from 6d. to 7s. 6d., the latter being for seedsmen; the fee must be enclosed with sample of seed. To those requiring a knowledge of grasses, weeds, and diseases of plants, the department are always willing to draft a report upon all specimens free of charge, and in cases of diseases to suggest best means of combating their ravages. —A. O'N.

The Ages of Trees.—There is a difference of opinion among experts as to the ages of some of the enormous trees to be met with on the western slopes of the Pacific. Some authorities have ascribed to these forest giants ages ranging up to 5000 years, but it is reported that a Professor attached to one of the United States Universities has recently been investigating the subject, and the results of his inquiries have led him to doubt whether any of these trees approach the age of even 2000 years. The gentleman in question went to the trouble, some time ago, of carefully counting the "rings" in the trunk of a tree which was 25 feet in diameter, and he found that these rings numbered only 1100, showing that the age of the tree could not have been more than that number of years. In the region over which this Professor's investigations extended trees have been known to reach a height of 350 feet.

Rhododendrons in Pots.—Rhododendrons in pots when in bloom are very saleable plants, especially at such holiday times as Easter. Not only are they beautiful objects then, but they are still of full value for planting outdoors in permanent positions, if of the hardier varieties. There are some most exquisite colours among those having a good deal of the *R. ponticum* in their blood, but unfortunately many of these are not hardy enough for planting out in the Northern States, while making grand pot plants. Plants of about 18 inches are of a good size for potting. If bushy, as they often are, such plants carry as many as a dozen flower buds each. It is usual for florists to obtain their plants before or about Christmas, pot them, and set them in a cool greenhouse, such as is often used for the storing of plants. The plants become settled in their pots in a month or two, ready for pushing along later for Easter blooming or any other occasion. About six weeks of heat will be required to bring them into flower in a temperature of, say, 65° in the daytime, and 55° at night. These plants like moisture at such times, both at root and top. Should the buds commence to open and full expansion appear, probably at a too early day, less heat may be given, with no injury to the plants. When the flowers open keep the plants from the sun, which will result in prolonging the display of flowers.

Otto of Roses.—Mr. W. T. C. Kelly, of Mentone, reports that the Rose de Grasse, which is the variety of Rose used for producing otto of Roses, flourishes in his district. He has about one-twelfth of an acre planted, and at the present time is obtaining 6d. per lb. for the petals from Messrs. Blogg Bros. Mr. Kelly says that the gathering of the Rose petals is an easy and pleasant occupation, and should be taken up by women. About 6 lbs. of petals per hour can be gathered by one active person.

Primulas from Chelsea.—We have received a boxful of beautiful Primula blooms from Messrs. James Veitch & Sons, Ltd., Chelsea. The lovely smooth petalled stellata hybrids are represented by over half a dozen distinct varieties in white, mauve, pink, and purple. There are also a number of attractive double varieties, together with very many large-flowered sinensis types and the handsome fimbriated forms. Altogether the varieties afford a splendid selection, and those who do not fancy one type of bloom can choose another. We hope, however, to see the plants growing at Chelsea, whence we shall have more to say.

Improved Strawberry Culture.—The amateur gardener can often adopt modes of culture, favourable to excellence, that would be hardly profitable for the market gardener. In Strawberry culture, for instance, it is said that much finer and more toothsome berries can be obtained by placing the plants on ridges than when grown on the level ground. The earth is thrown up into a wedge-like form a foot or so in depth, and then flattened on the apex by the back of a spade, so as to be only about 9 inches deep. The plants are set out about a foot apart along this narrow table on the top of this ridge. The result is said to be a surprise to those who are familiar only with the ordinary flat culture.—("Meehan's Monthly.")

An Embankment Idyll.—On the Thames Embankment there is a perfect little idyll going on in one of the Plane trees on the side nearest the river. For some days past a pair of blue rock pigeons have been carrying sticks to this tree, and this morning early we observed my Lady Blue Rock sitting comfortably on the miserable pretence of a nest which pigeons consider good enough for their offspring. So far only the intrepid London sparrow has built his untidy nest in the trees of the Embankment avenue, while the more retiring pigeon has kept away from the noise and tumult. The sight of the pigeon crooning on its nest, with the incessant roar and movement of traffic just below and the river almost as lively close at hand, reminds one of the exquisite picture of "Peace" which Professor Henry Drummond has drawn in one of his "Addresses," and where a painter is supposed to have represented the idea of "perfect peace" by a bird sitting quietly on its nest in a tree above a roaring torrent. We hope that, if the Plane tree where the Temple pigeon is housekeeping is among those being felled the powers which decide the destinies of the trees will listen to the plea of "Woodman, spare that tree," at all events till the confiding birds have reared their next family.

West Australian Poison Plants.—In the early part of July, 1895, the Bureau of Agriculture of West Australia suggested to the Premier that a full inquiry should be made into the poison plants of the colony. It was suggested that the plants should be botanically classified and described (which the Bureau was of opinion would be done by Baron von Mueller free of charge); that a qualified veterinary surgeon should be engaged to ascertain the toxic properties of the plants, and their effects upon different animals; and that, as dried specimens were of no use for analysing, seeds of the plants should be sent to the director of the Botanical Department of the British Museum, for him to cultivate and analyse the plants when they came. This, the Bureau thought, would cost about £1000. At the end of July, 1898, a circular was sent out by the Department, requesting farmers and others to forward a supply of the poison plants growing on their lands, in order that they might be sent to Edinburgh for a thorough investigation of their properties. As little response was made to this appeal, the Department itself secured a supply of Box, York-road, and Heart-leaf plants, as well as of seed of the two last named. These were sent to Fremantle for shipment in the German steamer, addressed to the Royal Botanic Gardens, Edinburgh, where they arrived in May, and whence by the good offices of Professor Bayley Balfour, they were forwarded to Professor Stockman of the University of Glasgow, who had consented to undertake the experimental investigation of their toxic action. The Professor went very thoroughly into their properties, and drew up complete tables showing the line and results of his experiments on frogs and rabbits, so that now the West Australian Government have a full knowledge of this important subject.

A New Winter-flowering Coleus.

Coleus Mahoni.

THE introduction of the pretty blue flowered *C. thyrsoideus* three or four years ago opened up a new field of usefulness for a genus which hitherto had been cultivated solely for the sake of the beautifully coloured foliage of many of its varieties. The species alluded to appears to have been the forerunner of a distinct group, which will have for its chief attraction winter-flowering qualities, for following quickly in its footsteps comes another new plant, *C. Mahoni*, the subject of this note. It is named after Mr. Mahon (an old Kewite), who sent seeds of both species from British Central Africa to Kew, the newer one arriving in 1898. Though not perhaps of so high an order of merit as *C. thyrsoideus*, it is very pretty, and well worth growing for decorative work. It is of more slender habit than the older plant, with smaller leaves of thinner texture; they are also without the sticky glands and aromatic character of *C. thyrsoideus*. The leaves are ovate and toothed, and covered with minute hairs. The largest ones are 5 inches long by 2 inches wide, with an additional 2 inches being added to the length by the petiole. The flowers are small, purple, with golden anthers, and borne in large, graceful terminal panicles; a striking contrast to the stiff, upright inflorescence of the other species. It grows $1\frac{1}{2}$ to 2 feet in height, and makes a large bush if stopped frequently in a young state. It succeeds admirably if given similar treatment to that usually accorded *Salvia splendens* var. *grandiflora*. A group of plants are to be seen in flower in the Cape house at Kew.—W. D.

A Nonagenarian Gardener of the 19th Century.

It is a notable fact that there was a strong predilection in England during especially the first half of the last century for Scotch gardeners, and this was particularly apparent for many miles around the locale near where four shires meet in Wolford Wood, near Moreton-in-the-Marsh, being those of Warwick, Worcester, Gloucester, and Oxford, and which spot is marked by an ancient, tall, and massive monolith, called the "Four-shire Stone." In former times it was a rendezvous for contestants in the "noble art" of prizefighting, so that they might be enabled to evade the law by stepping out of one shire into another when the county or parish police constable put in an appearance. It is needless to remark that the object in question afforded considerable wonderment and interest to the writer in his boyhood, and whose paternal home was about four miles distant, and whose father (a native of Fifeshire) was then head gardener upwards of forty years at one of the finest baronial estates situate on the southern boundary of Warwickshire, and there served in succession three related members of the estate, but all four of whom have long since passed to the "great majority," as also amongst whom is the writer's dear old friend who heads this memoir, and who, it is worthy to record, was the late Mr. George Easton (a native of Melrose), for upwards of sixty years head gardener to the late Earl Redesdale, Batsford Park, now inherited by A. Freeman Milford, Esq., a nephew (of Bamboo fame), and who when he came into possession of the fine old baronial estate of his deceased relative, with characteristic kindness and honour at once inquired into the position and age of the faithful and long serving "knight of the spade," and forthwith resolved that he should continue to enjoy the same salary and garden residence for the remainder of his life, in company with his unmarried eldest daughter (his esteemed wife having predeceased him some years ago).

It may here be remarked that the old gardener's cottage was not in immediate contact with the garden or kept grounds, and that a convenient residence was provided for the successor. It is now about four years since my aged friend died, in his ninety-sixth year, I believe. He was a good "all-round" gardener, his forte being fruits and vegetables, and I have a vivid recollection of the luscious Melons and Peaches it was my privilege sometimes to enjoy in the days of auld lang syne. There exists a poetical effusion by his brother Robert at the paternal home at Melrose, the copy of which has been in my possession for nearly forty years past, which, if they could read it, would well depict him to readers of the Journal. It is also a remarkable fact that the venerable subject of this sketch never visited Scotland after coming South in early manhood.

In reference to the popularity of Scotch gardeners at the period already indicated, there were at least a dozen occupying the leading situations within a radius of twenty miles of the writer's paternal home, but all of whom have long since gone to that bourne from whence no traveller returns, and their places filled by Englishmen.—SEXAGENARIAN.

Carrots.

AMONG vegetables for which there is a constant demand these rank as one of the most important which a gardener has to supply. By early sowing in frames on slight hotbeds, in sheltered corners where temporary protection may be given, and by care in storing the roots from the main crop, much may be done to prevent a break in the supply. In preparing the site for the main sowing it is always advisable to have the land tilled to a good depth. The ground should be light and fertile, enriched with applications of manure for previous occupants, and not recently dressed, as fresh manure near the surface causes the roots to grow forked and unshapely. If it is felt that manure ought to be used owing to poverty of soil, place it 12 or 15 inches beneath the surface when digging, and if this operation can be carried out in autumn so much the better.

I have found the position previously occupied by Celery an excellent one on which to sow Carrots, the land being forked over and made level. Before sowing we usually apply a heavy dressing of wood ashes and soot, first making the ground thoroughly firm by treading and then raking all well together. When a smooth surface has been secured the seeds should be sown in drills a foot apart. Have the ground in first-rate working order, as nothing is gained, and often time and seed are lost through a pasty condition of the bed at sowing time.

In many gardens Carrots are by no means an easy crop to grow owing to the attacks of grub or maggot. By dressings of soot, by sowing at different seasons and in different situations, and by autumn cultivation of the land, exposing the soil and the plant enemies it contains to the action of the frost and downfall of winter, a great deal may be done to minimise, if not totally eradicate, the evil. Carrots are usually looked upon as being a sure crop on sandy soil when this has been well cultivated. It may appear strange that my greatest difficulty with these roots has been on gravelly land. The oft-repeated advice to sow late was followed with distinct want of success, sowings in June and July being just as susceptible to attack as those made in April and May. Sown at the end of February or the beginning of March, as soon as the ground could be got into condition, the trouble practically ceased, and a greater weight of roots per rod was the result. I know that in many cases this early sowing would result in roots too large and coarse, but with us it was the lesser by far of two evils, and proved of great advantage.

Sow thinly and thin early may be taken as a golden rule. When the young plants are 2 or 3 inches high reduce their numbers until they stand 3 or 4 inches apart. This I find quite enough room to allow for ordinary purposes, but if large roots are needed for exhibition they should not be left nearer each other than 10 inches or a foot. In poor soil or that of a retentive character the practice of making holes with an iron bar at the proper distance asunder has much to recommend it if Carrots are desired for show purposes. The holes thus made are filled with fine rich soil mixed with a small proportion of wood ashes and soot.

The Dutch hoe should be brought into use as soon as the rows can be properly seen, and this continued at intervals will not only keep down weeds but greatly assist the growth of the crop. Dressings of soot are of great benefit given two or three times during the season, and help to ward off insect attacks. Nitrate of soda, applied at the rate of an ounce to the yard, has proved of distinct advantage in poor ground, but must never be used in heavy doses. A solution of stirred softsoap with a wineglassful of petroleum per gallon well stirred together is excellent for repelling the aphid trouble. This should be applied to the tops in the evening, spraying lightly on with a syringe.

In forcing early Carrots it is well to avoid strong heat. A hotbed formed of stable litter and leaves may be formed about 15 inches thick after it has been well trodden. The litter and leaves should be turned over two or three times before being made into the bed proper. About 6 inches of light, open soil should be spread evenly on the top, and when warm the seeds may be sown in drills or broadcast. I prefer the former plan, as it is then an easy matter to take a crop of early Radishes from between the rows. Ventilation must receive attention as the young plants grow, and if very cold nights are experienced coverings of mats and litter may be found necessary.

The intermediate varieties, such as James', are to be recommended for main crops in private gardens, for though from these there may not be obtained quite such heavy crops as from the longer-rooted sorts, they are as a rule of greater service. Champion Horn is excellent for sowing on warm borders and in frames, as also is Sutton's Early Gem. Early Nantes is a favourite with some growers, and is certainly of great merit for pulling in a young state.—J. W. J.

The Cultivation of Tomatoes.

MARCH is the best month for commencing the culture of Tomatoes, whatever method of growing them is adopted. Seedlings raised now grow away with considerable vigour, owing to the generally increased amount of light and the usually higher mean temperature of warm structures used for early cultivation of Tomatoes and other subjects. At this season of the year the quickest method of raising plants is by seed, sowing some good and reliable variety, which should be grown on without check in full light and a dry warm temperature. The chief matter in sowing Tomato seed is to sow it thickly, so that the plants from the first are not crowded. The seeds are best sown in 5 or 6 inch pots, these being amply drained and filled with good compost, consisting of loam and leaf soil, with a free admixture of sand. Press it firmly into the pots, and water slightly; then sow the seeds an inch apart over the surface, and cover with a little soil pressed gently down upon it. Maintaining this soil moist without watering is advantageous, and this may be done by covering the pots with glass and paper to exclude light. Place in a temperature of 60°, which will soon induce the seeds to germinate. When this is effected, remove the glass and paper, and the next day elevate the pots close to the glass on a warm shelf, where the young plants will grow sturdily, instead of advancing too rapidly in length. Afford due, but not saturating, supplies of water, which of course is better if of the same temperature as the house in which the plants are growing. The result will not only be sturdy plants, but will be furnished with a nice lot of roots.

On passing out of the seed leaf into the rough leaf the seedlings should then be transferred to pots 3 inches in diameter. Use a similar compost to that recommended for sowing the seed, and pot the plants low down so as to bury the stems up to the seed leaves. The object of this is to induce them to emit roots, which sturdy stemmed plants will readily do. This materially strengthens the plants still further, but the light position accorded the plants must be continued. In a very short time, with careful attention not to allow the plants to suffer for want of water, they will be ready for a further shift into larger pots; 5 or 6-inch size pots are suitable if clean and dry. Place a few crocks at the base, and over them portions of turf. For compost prepare some turfy material mixed with sand, wood ashes, and a little decayed manure and bonemeal. Turn out the plants from the small pots before they become root-bound, and place the balls direct on the turfy material over the drainage. Work compost round them, making it firm with a blunt stick. If placed in the pots as low as possible, more stem will be buried, and an increased supply of surface roots obtained. By the time the plants are becoming established in these pots somewhat cooler treatment will suffice. They can stand on a shelf in an ordinary greenhouse where light is abundant and air liberal whenever the weather is favourable. The plants are placed in these pots preliminary to the final potting or planting out. This important operation must be carried out before the plants are root-bound.

The compost for the final potting should be of a substantial character. A strong holding loam should be the main ingredient. Of this employ four parts—one part manure, an admixture of wood ashes or burnt refuse, pounded brick dust, and bonemeal. Mix all well together and make moist, though not wet. The readiest method of growing Tomatoes is to plant out on shallow borders on the sides of a span-roof house, training the stems up the roof. The border may be 9 inches in depth, and about 15 inches wide. The base ought to be slightly inclined or suitably drained to carry off superfluous water. Place the plants on small mounds of soil, arranging them a foot apart. Not more than enough soil should be used to nicely cover and surround the ball of roots at first, but press it well round. The ball of roots and soil should be thoroughly moist, and the compost used also in a healthfully moist condition. Little water will then be required until roots are pushing and the soil becomes somewhat dry. The time elapsing before this becomes necessary varies according to the weather. When water is given, sufficient may be afforded to soak through the whole mass, repeating this as necessary.

If pot culture is decided upon, the size of fruiting pot should be 11 or 12 inches. Place at the bottom a little well-placed drainage, consisting of crocks or oyster shells, and cover with a layer of turf. The compost recommended for planting out may also be used for pots. In the fruiting pots place the plants low down, and surround with soil in layers, making each very firm by ramming with a blunt stick. When the ball has been covered, enough has been used at this stage. The pots with the plants must be stood in as light a position as possible, carefully watering. No more soil should be added until the first bunch of fruit is formed, when apply a top-dressing of rich compost, mainly loam, manure, bonemeal, and wood ashes, 1 or 2 inches thick, making it firm. The training of the plants, either when planted out or in pots, is best confined to one stem, securing to wires under the roof, or in the case of pots to upright stakes inserted in

them. The method of confining the plants to single stems necessitates some pruning away of superfluous shoots. This, however, should be done early, when the shoots which are to be removed are small. These are the growths which push from the axils of the principal leaves. They should be rubbed out with the finger and thumb when they have attained to an inch in length. So long as the main stems extend these shoots will be produced, and if not closely attended to some will soon grow strongly, advancing into vigorous branch growth, and cause crowding, which is detrimental to prolific fruiting.

By the time the roots have increased and taken possession of the soil, the first truss of bloom will have been produced and a nice bunch of fruit set and swelling. The plants are then ready for some additional food, which should be given in the form of top-dressings of rich soil mixed with a little bonemeal, guano, or some general artificial fertilizer. About 2 inches of compost may be given at one time, pressing it firmly down, and water the plants as freely as before. When a new set of roots have ramified well into this fresh compost another similar dressing should be given, repeating the operation each time roots fully occupy the new compost. The activity of the roots is thus maintained, and the plants go on producing truss after truss of fruit. The watering must at all times be of a copious character, and so as to wet the whole ball of soil and roots. If this is not done the flowers will drop without setting fruit. When the pots are becoming well packed with roots farmyard liquid manure is beneficial, also clear soot water. Sprinklings of artificial manure, washing it in, are helpful and sustain the plant when burdened with fruit and still producing bloom. A constant circulation of air is indispensable to Tomatoes, but in cold dull weather also afford a little gentle heat to develop a dry and buoyant atmosphere and aid the setting of fruit. These are excellent aids in dispersing the pollen, but further help may be given by shaking the truss of bloom when the flowers are fully open at midday. Large trusses of bloom frequently have one large deformed flower. This is best removed as it only produces deformed fruit.

Regular attention in supplying moisture to the roots is essential, as irregularity in doing so may cause the fruit to crack. Ripe fruit, however, hanging on the plants after it is ripe is liable to crack. Therefore, as soon as it is ready gather and use. Any fruits that are not fully ripe, and which may crack if left, can be removed and finished on a warm sunny shelf. Their removal relieves the plants, and enables the grower to continue the application of food and moisture in a liberal manner for the benefit of the succeeding bunches. The wholesale removal of leaves is to be deprecated, or severe shortening before the crop is fully matured. Some of the lower leaves as they begin to turn yellow may be cut away or reduced. When the space available for the main stem to extend is filled, top the plants, and always rigidly suppress side growths.—E. D. S.

Royal Horticultural Society.

Drill Hall, March 12th.

THE meeting at the Drill Hall on Tuesday last was largely attended, and in point of numbers and quality of exhibits it was certainly the best since the new year began. The bulbous flowering subjects as represented by Lachenalias, Narcissi, and Iris formed a conspicuous feature, while the Orchid display was indeed extensive and very fine. Messrs. Veitch and A. J. Thomas brought up large collections of splendid Apples to refresh the mind as to what can be done on British soil. The display of Cyclamens, Tulips, and forced shrubs were likewise features of great attraction. The Narcissus Committee sat for the first time this season, but they recommended no awards. In the afternoon a lecture was to have been given by Mr. G. Davison on "Pergolas," but this was postponed owing to the author's illness. Prof. Henslow gave, instead, an interesting discourse on some of the plants exhibited. W. Bennett-Poë, Esq., occupied the chair. There were thirty-one new Fellows elected. We learn that at the next meeting on the 26th inst., Captain Holford of Westonbirt intends to stage a collection of his wonderful Amaryllis (Hippeastrums).

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (in the chair); with Messrs. Henry Esling, Geo. Kelf, Jos. Cheal, J. Willard, J. W. Bates, S. Mortimer, Alex. Dean, C. Herrin, E. Beckett, J. Wright, H. Markham, W. Poupard, Jas. H. Veitch, W. Iggulden, A. Ward, G. Norman, J. Smith, F. Lane, A. H. Pearson, H. Somers Rivers, W. Wilks, and J. Jacques.

Mr. A. J. Thomas, Rodmersham, Sittingbourne, was represented by a collection of Apples and Pears. The specimens were as a rule clean, of good size and beautifully coloured. The best Apples were Newton Wonder, Lord Derby, Blue Pearmain, Chelmsford Wonder, Gloria Mundi, The Queen, Bramley's Seedling, Royal Jubilee, Lane's Prince Albert, Bismarck, Annie Elizabeth, Cox's Orange Pippin, Duke of York, Hoary Morning, Barnack Beauty, and Northern Spy (silver Knightian medal).

Messrs. J. Veitch & Sons, Ltd., Chelsea, contributed a splendid collection of Apples. The fruits were arranged in small baskets, and though not very large, were brilliantly coloured and very solid. The varieties included Cox's Orange Pippin, Alfriston, Duke of Beaufort, Castle Major, Standard Bearer, Cox's Pomona, Lord Derby, Beauty of Kent, Rymmer, Brownlee's Russet, Bedfordshire Foundling, Chelmsford Wonder, Mère de Ménage, Golden Noble, Newton Wonder (superb), Wellington, Norfolk Beefing, Melon Apple, Hormead Pearmain, Sandringham, Barnack Beauty, Bismarck, Bramley's Seedling, Winter Hawthornden, Tyler's Kernel, Lane's Prince Albert, King of Pippins, Lamb Abbey Pearmain, and many others (gold medal).

Small exhibits of fruit were staged by Messrs. G. Ringham, Penshurst; Roe, Roës; Kempsham, Northampton, and others.

Narcissus Committee.

Present: W. Bennett-Peë, Esq. (in the chair); with Messrs. G. Reuthe, Walter T. Ware, S. A. de Graaff, P. R. Barr, Geo. S. Titherage, D. Pearson, W. F. M. Copeland, R. Sydenham, Geo. Engleheart, and W. Ponpart.

There were no awards made by this body.

Floral Committee.

Present: W. Marshall, Esq. (in the chair); with Messrs. Charles E. Shea, H. B. May, R. Dean, W. P. Thomson, R. Wilson Kerr, C. J. Salter, Chas. Jefferies, R. C. Notcutt, J. W. Barr, J. D. Pawle, Herbert J. Cutbush, E. H. Jenkins, Wm. J. James, Chas. Blick, Geo. Paul, Geo. Nicholson, E. T. Cock, and John Jennings.

Messrs. Thos. S. Ware, Ltd., Hale Farm Nurseries, Feltham, London, had an extensive group of dwarf alpinas and forced Narcissi in pots. A few winter-flowering Carnations were also included. Amongst the alpinas the little *Scilla bifolia alba* and *S. siberica alba* were particularly beautiful. The latter is the better variety, having larger and finer flowers. The blue Primrose, *P. acaulis cærulea*, together with Burser's Saxifrage, *Saxifraga apiculata*, *Iris persica purpurea*, *I. reticulata*, *Shortia galacifolia*, *I. Heldreichi*, and *Galax aphylla* were wonderfully sweet. The Hepaticas, Cyclamens, Primulas, Crocuses, &c., were numerous and good (silver Banksian medal). Messrs. James Veitch & Sons, Ltd., set up a group of *Cineraria polyantha* Kew Blues. The plants were very telling. Messrs. R. Wallace & Co., Kilnfield Gardens, Colchester, sent up a choice little group of bulbous flowering plants in pots. *Narcissus pallidus præcox*, the pretty sulphur-coloured trumpet variety, was included. *Iris persica* (true) was here, as also *Anemone blanda*, *Scilla siberica alba*, *Iris stylosa speciosa*, *Narcissus Queen of Spain*, and some other choice species of Irises and Narcissi (silver Banksian medal).

Messrs. Barr & Sons, King Street, Covent Garden, made an extra effort on this occasion and furnished a display that drew crowds of admirers. Narcissi of all kinds were shown liberally, the tables extended indeed over 25 feet of tabling. Sir Watkin, Barri conspicuus, princeps, Horsefieldi and coronatus chiefly figured. The beautiful Croci staged so as to appear as growing through moss, were very fine. *N. pallidus præcox*, *N. cornubaria citrina*, *N. nanus*, *N. cyclamineus*, *N. minimus*, and other dwarf species of this lovely spring genus of flowers were here included.

Messrs. Wm. Cutbush & Son, Highgate, London, N., arranged a Tulip exhibition which covered the whole length of one of the long tables. Three bulbs were furnished in each 6-inch pot, and were bedded around with moss. *La Belle Alliance*, crimson; *Carl de Moor*, deep glowing yellow flushed with red; *Mon Tresor*, yellow; *Prince of Austria*, copper red, and the lovely *Joost Van Vondel White* (silver-gilt Banksian medal).

Messrs. Paul & Son, Waltham Cross, Herts, staged what was recognised on all hands as a magnificent group of forced pot shrubs. The plants were clustered with brightly coloured flowers, all strong and of good substance. The *Prunus* tribe was well represented, including the double Almond, *P. ruscus racemosus*; double white Peach, *P. triloba*, the beautiful Carnation-flowered Peach, and many others. *Staphylea colchica* and the *Pyrus floribunda*, always charming as forced subjects, were further additions to the group. The dwarf Clematis in 5-inch pots were conspicuously fine, particularly such varieties as the white-flowered Gould Veitch, the lavender Lord Derby, or the deeper violet coloured *purpurea elegans*. The latter loses its reddish tint when produced as an early flower, and develops more truly as a blue. One other subject may be brought to notice—namely, *Vitis heterophylla variegata* (silver-gilt Flora medal).

Messrs. John Peed & Son, West Norwood, S.E., had an attractive though rather crowded group of Ghent Azaleas, *Staphylea colchica*, *Prunus sinensis fl.-pl.*, *Viburnum opulus*, the Snowball Tree; beautiful specimens of the common Laburnum with long racemes, and numerous bulbous flowering plants. Chief among the latter was the Narcissi.

Roses in March at a Drill Hall show are truly a novelty, and such fine Roses, too. These came from the redoubtable Canterbury grower, Mr. Geo. Mount. He staged three varieties of eighteen blooms each, shown on long stems. These included *La France*, Mrs. John Laing, and Captain Haywood. The strength of build and the wonderful colouring of the blooms was quite remarkable (silver Banksian medal). Messrs. R. & G. Cuthbert, Southgate Nurseries, Middlesex, staged Azaleas in a number of varieties. The fragrant white Madame Lemoine Lilac shown as standards, with slightly taller standard

Snowball Trees and Laburnums, formed a handsome and attractive group. Azalea \times Anthony Koster, *A. pontica*, Madame Thibaut, *A. \times* Alphonse Lavalle, and *A. \times* M. Koster, were the most pleasing varieties amongst the Azaleas (silver Banksian medal). Messrs. J. Veitch & Sons, Ltd., Chelsea, sent up eight large and bushy specimens of the single, white-flowered *Prunus Amygdalus Davidiana alba*. As seen in this group the variety was certainly very conspicuous and attractive.

Messrs. Cannell & Sons, of Swanley, came forward with a large raised group of hybrid Cinerarias placed on the right hand of the entrance door. The front plants pleased us best, for while growers must guard against allowing this strain of Cineraria to become too "stocky," there is a danger of allowing them to become too open and sparse. The plants here received distinctive names, and of these the brilliant rosy Myra, and the splendid violet-blue Michaelmas Daisy (appropriately named), were the most telling. From Mr. John May, Gordon Nursery, St. Margaret's, Twickenham, came a very creditable group of varieties of *Cyclamen latifolium*. These were well deserving of praise, as the strain is certainly as fine as any we have seen for a long while. The plants, of course, bore evidence of very careful culture (silver Flora medal). Messrs. John Laing & Sons, The Nurseries, Forest Hill, London, staged a miscellaneous group of greenhouse and stove flowering and foliage plants. Though the staging was far too crowded, the exhibit was at the same time very effective. The *Calla Elliottiana* was included, together with Azaleas, Lily of the Valley, and Begonias. A group of *Primula Kewensis*—*verticillata* (male) \times *floribunda* (female)—was staged from the Royal Gardens, Kew, and needless to say, this splendid hybrid received much appreciation. Capt. Holford, Westonbirt, sent up a number of seedling *Hippeastrums* (*Amaryllis*), all of them more or less too pale flowered.

Mr. J. Williams, Oxford Road, Ealing, showed an improved epergne, which was delightfully decorated with spring flowering flowers. Messrs. Geo. Jackman & Son, Woking Nursery, Surrey, set up a group consisting for the most part of Narcissi, Primulas, Lachenalias, and true Pæonies. Messrs. Paul & Son, The Old Nurseries, Cheshunt, N., staged some splendidly flowered plants of *Cœlogyne cristata alba*, and the newer *Cerasus J. H. Veitch*. A well-flowered selection of *Lachenalia luteola* was also a feature of attraction.

Mr. C. J. Wakefield, 58, Hindon Street, London, W., exhibited his patent "Floral-aid" for the prompt and easy arrangement of flowers. The Church Road Nursery Co., Hanwell, W., brought together something like 160 plants of *Cyclamen latifolium*, all in 5 and 6-inch pots. They were creditably grown and well flowered (silver Banksian medal).

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the chair); with Messrs. J. G. Fowley, de B. Crawshay, H. M. Pollett, H. Bullantine, H. Little, F. Sander, W. H. Young, J. Wilson Potter, T. W. Bond, E. Hill, H. Pitt, Frank A. Reader, Jas. Douglas, Jeremiah Colman, and H. J. Chapman.

Messrs. J. Veitch & Sons, Ltd., Chelsea, occupied their customary position with a most beautiful group of Orchids. The plants were admirably grown, and carried excellent flowers. The Dendrobiums were particularly attractive, and included *Wardianum*, *splendidissimum*, *Leeanum*, *barbatulum*, *Cybele elegans*, *Findlayanum*, *nobile Cooksoni*, *splendidissimum*, *crassinode Wardianum*, *euosmum virginale*, *Rolfæ*, *Wiganæ*, *Kenneth*, *Sosius*, and *Euryalus*. There were also *Epidendrum Clarissa*, *Cymbidium eburneo-Lowianum*, *Phaius Normani*, *P. amabilis*, *Lælio-Cattleyas Myra*, *coronis*, *Baroness Schröder*, *Euphrosyne*, *collistoglossa ignescens*, *Claria*, *Cattleya intertexta*, *Cypripedium Euryades*, *C. Lathamianum*, *C. Godseffianum*, *C. J. Howes*, *C. Euryades Leonis*, *Lycaste Skinneri*, *Phalænopsis Mrs. H. J. Veitch* (see illustration), *Sophrolælia Læta*, and others.

Mr. H. T. Pitt, Rosslyn, Stamford Hill, arranged a group of Orchids, which would have been much more attractive had there been a groundwork of Ferns or other suitable greenery. The plants included Dendrobiums, of which *D. atro-violaceum* was splendid, *Phaius*, *Odontoglossums*, *Lælias*, *Lycastes*, *Cypripediums*, and others. Mr. W. P. Bond, gardener to J. Colman, Esq., Reigate, showed a fine exhibit, which included *Cœlogyne cristata*, *Angræcum sesquipedale*, a few Dendrobiums, and *Lælia Jongheana crispa* and *Lælio-Cattleya* Captain Percy Scott.

A superb collection of Dendrobiums was contributed by Messrs. H. Low & Co., Bush Hill Park. The plants were magnificent examples of the best culture. Amongst others we noted forms of *nobile* and *Wardianum*, *Findlayanum*, *crassinode*, *primulinum*, *Murrhinianum*, and *rubensgrandiflorum*. They sent also *Angræcum citratum*, *Cattleya Schröderæ splendens*, *C. Trianae*, *Lælia Jongheana*, *Lælio-Cattleya* Hon. Mrs. Astor and *Miltonia Roezli*.

Mr. W. Cypher, Cheltenham, was again represented by a group of Dendrobiums. As is always the case with Mr. Cypher's plants, they were of fine varieties well grown, but they suffered from the bad light of the position in which they were staged. The best were *nobile nobiliss*, *splendidissimum marginatum*, *apolles albens*, *barbatulum*, *nobile Ballianum*, *Cybele delicata*, and *rubens grandiflorum*.

Mr. J. M. Black, gardener to R. G. Thwaites, Esq., Streatham Hill, arranged a small group of Orchids, mainly comprising Dendrobiums. Mr. C. J. Salter, gardener to Mrs. Haywood, Woodhatch, Reigate, staged a few beautiful Dendrobiums. The plants were grandly grown, and carried fine flowers.

Mr. W. Stevens, gardener to W. Thompson, Esq., Stone, showed a small group of Orchids, including *Odontoglossum crispum* Queen Empress, and *O. excelsa* McBeaneana, and others. Mons. F. Claes, Brussels, contributed a few *Odontoglossums* of attractive form and colour. Mr. W. H. White, gardener to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, staged *Odontoglossum Ruckerianum*, *O. coronarium miniatum*, and others. There were one or two minor exhibits of Orchids in addition to those named.

Awards by the Orchid Committee.

Silver-gilt Flora medal to J. Veitch & Sons, Chelsea, for group of



PHALÉNOPSIS MRS. H. J. VEITCH.

Orchids. Silver Flora medals to H. T. Pitt, Stamford Hill; Jas. Cypher, Cheltenham; W. Thompson, Walton Grange, Stone; and Hugh Low and Co., Eufield, for group of Orchids. Silver Banksian to Mrs. Haywood, Woodhatch Lodge, Reigate; J. Colman, Gatton Park, Reigate; R. G. Thwaites, Streatham, S.W., for group of Orchids. Vote of thanks to Messrs. Paul & Son, Cheshunt; Sir T. Lawrence, Dorking; and M. Florent Claes, Brussels, for group of Orchids.

Certificates and Awards of Merit.

Apple Lamb Abbey Pearmain (J. Veitch & Sons).—A small, late-keeping dessert Apple that is too well known to call for a description; (award of merit).

Cypripedium Ernesti (J. Norris).—The appearance of this *Cypripedium* is as if the whole flower had been varnished. The pouch and petals are red brown with darker venations. The dorsal sepal is also brown, pale to green, and with a margin of blush white (award of merit).

Cypripedium Lord Derby, *Sander's variety* (F. Sander & Co.).—This is very handsome. The large dorsal sepal is green with red brown longitudinal lines. The petals are greenish yellow, paling to white at the tip, and with numerous bright brown spots. The pouch is dull brown (first-class certificate).

Dendrobium Ainsworthiae Edithae superba (C. J. Salter).—A grand Dendrobe. The colour of the sepals and petals is rich rose-crimson. The lip is white with a margin of rose and a deep crimson throat; (award of merit).

Dendrobium Rochlingianum (R. G. Thwaites).—A chastely beautiful flower. The sepals and petals are white tipped with rose. The margin of the lip is white, and the throat covered in bright rose hairs (award of merit).

Laelio-Cattleya racuna (J. Veitch & Sons).—This bigener is from a cross between *Cattleya guttata* and *Laelia cinnabarina*. The sepals and petals are pure yellow, and the lip deep, blood crimson (award of merit).

Odontoglossum crispum Queen Empress (W. Stevens).—A perfect crispum. The spike carried nine flowers of the most remarkable substance and shape. The prevailing colour is rose with a suffusion of purple. The petals are very broad. The lip is pure white (first-class certificate).

The Lecture.

Professor Henslow's lectures at the Drill Hall are always attended to with a marked amount of interest. He followed his usual custom of lecturing on some of the points of popular interest to be found in connection with the plants exhibited in the Hall. He opened his discourse by referring to *Iris persica*, which is interesting historically as being the first flower that Curtis figured in his "Botanical Magazine," over a hundred years ago. While a great many plants have entirely changed the shapes and forms of their flowers, those of *Iris persica* are the same to day as they ever have been. Taking then a large double Daffodil in his hand, the Professor went on to say that while there are a great variety of *Narcissi* known to botanists, the latter are inclined to think that the wild Daffodil (*Narcissus Pseudo-Narcissus*) is the one out of which all the other forms—the maximum and minimum, the major and minor—have come. "If botanists are to be trusted," said the lecturer, "these are actually one and the same, though changed by environment."

Then the fringed *Cyclamens* received attention. Of recent years we have been having all kinds of fringed flowers and foliage, as seen in the *Begonias*, *Primulas*, and the aforementioned. This "crested" of the foliage and flowers simply arises from an excrescence of growth, probably due in the first instance to liberal culture. It really is a branching outwards of the fibro-vascular bundles of the leaves. When these bundles branch underneath the surface a fasciated stem growth accrues, as seen often in *Liliums*. This exuberant growth is very remarkable. Cabbages often show signs of it to a marked degree, and the under surface of the leaves may break out into long slender stalk-like protuberances, or into funnel shaped trumpets. No one plant, but even a whole break of plants, will show such growth, as was seen in the garden of Sir John Lawes some years ago. Speaking of malformed leaves brought the Professor in mind of the green Rose (*Rosa viridissima*), whose petals are entirely green and foliage-like. Leaves, indeed, have done wonderful things; and we have incontrovertible proof that a Pea-pod is simply a metamorphosed leaf.

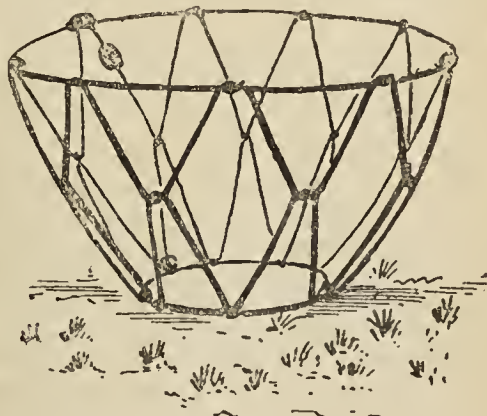
The *Prunus* or Plum tribe, so well shown in the Hall on Tuesday, are more or less all remarkable for their early-flowering properties. Go where we like all over the world, and we find the *Prunus* tribe supplies fruit and food for the natives—in Japan, Persia, North America, or Europe. *Prunus Cerasus* is a species which has given many varieties of Cherries; *P. Avium* is the Gean; *P. damascena*, the parent of the Damsons; *P. domestica*, also called *Prunus communis*, is the parent species which has given rise to all our cultivated varieties of Plums. *P. damascena* was known by Pliny, and no doubt many other species were also. The Almonds, Peaches, and Nectarines are simply varieties of the same species; or indeed, as the Professor said, we may say they are practically all the same, for we can get fruits half Almond, half Peach, or half Peach and half Nectarine on the same tree. The Americans have raised all their stock of Plums from hybrids originally got from crosses between the American and Japanese wild Plums. With further reference to *Cytisus* and *Kerrias*, Professor Henslow's lecture ended.

A Protector Novelty,

For Plants, Flowers, and Strawberries.

THIS invention is for protecting and supporting growing Strawberries. As seen by the illustration, it is woven in the flat, with two eyes at one end and two hooks at the other; by bringing the ends together, and placing the hooks in the eyes, it forms an inverted cone or basin-shaped frame, as above, which must be placed round the plant.

When the fruit is formed it will be supported on the outer edge, 5 inches from the ground, and out of the reach of insects. The plants will be much less trouble to keep clean, the Strawberries less liable to rot in damp weather, less costly to pick, and straw or litter dispensed with, and 25 per cent. more plants can be grown on the same space of ground. These frames are made of stout galvanised wire, and are practically imperishable. When not in use they can be stored flat in a very small space. The novelty is the invention of Mrs. Brett, South Raynham, Fakenham, Norfolk, and was brought to our notice by Messrs. Boulton & Paul, Ltd., Rose Lane Works, Norwich. All communications, however, should be made to Mrs. Brett.



United Horticultural Benefit and Provident Society.

FULL thirty-five years ago a small body of gardeners met together at the Green Dragon Hotel, Bishopsgate Street, in the City of London. They had come together thus to consider certain propositions which had previously been sent out and around, upon the point of inaugurating a benefit and provident society, to be wholly established for the succouring of men of the garden craft, and to be worked solely by working gardeners. No doubt there was a good deal of argument required before all minds were agreed on this, that only gardeners know the needs of gardeners, and that a "craft" society ought to meet with success from the members of that craft, wherever their location might

be. So it was ultimately settled to form a United Horticultural Benefit and Provident Society. For many years—almost twenty years—the society did fairly well. It was well officered and carefully managed; but gardeners are very conservative in many things, and the Gardeners' Benefit and Provident Society did not increase very rapidly in its membership. Probably its presence was not known, and, acting on this supposition, Mr. John Wright, V.M.H., editor of the Journal, some years ago penned a vigorous appeal to the gardeners of Great Britain, including Ireland, to come forward and support an institution whose existence was maintained for the binding closer of that common tie of brotherhood and kinship which marks the gardeners in every corner of the land, from Cape Wrath to Land's End. Mr. Wright's appeal met with the greatest success, and from that time a new and progressive era dawned. But while the United Horticultural Benefit and Provident Society is now active, influential and robust, having a membership of 851, it has reached the stage at which its members see far greater possibilities for it, and at the thirty-fifth annual meeting, held in London last Monday (11th inst.) evening, numerous suggestions were made, all to the end that the Society might be better advertised, and its reasons for existence better understood by the many thousands of other gardeners whom the 851 at present constituting the society would heartily welcome amongst them. Young men were especially referred to, because they were less likely to have joined any local society than older gardeners. But even if one is in a local friendly society, there is surely room enough for a little extra thrift in the land; and, at all events, gardeners who have a pride in their craft might well spare a little of their interest for the U.H.B. and P. Society. Mr. Collins of 9, Martindale Road, Balham, S.W., who is secretary, will be pleased to furnish information to those who communicate with him. As has been already stated, the annual general meeting met in the Caledonian Hotel, Robert Street, Adelphi, W.C., on Monday evening, under the presidency of Mr. W. Roupell. About thirty members were present. The committee and other officers were re-elected, each receiving unanimous votes of thanks for the work done by them during the past year. After the report and balance-sheet for the year had been read discussion was invited. Save for a query by Mr. Burge as to the reason for the secretary's salary appearing twice on the balance-sheet, the accounts were passed as audited and as printed. It was explained, in answer to the above, that up till the present year, through some peculiar arrangement, the secretary's salary had always been paid one year behind. The committee wished to bring up the year's arrears in this particular, hence the double entry. From January, 1901, Mr. Collins will be paid by quarterly instalments, which must surely be much more satisfactory to himself and to the members. It was resolved to print and distribute 3000 copies of the rules, including the actuary's report. A division took place amongst the members about whether 5000 or 3000 copies should be printed, but the latter was agreed upon. It was resolved, however, to send out a large number of extra copies of the year's report as herewith presented.

Report for 1900.

The committee have great pleasure in presenting the annual report and balance-sheet for the year ending January 14th, 1901, and stating that the society continues in a sound and flourishing condition. Eighty-three members joined during the year, nineteen lapsed, and four died. The membership now stands at 851. The amount of subscriptions paid by members to the benefit fund, including arrears, was £1346 14s. 8d. The sick pay account was £301 3s., there being a great amount of sickness during the early part of the year. This is covered by deductions of 8s. 10d. and 5s. 10d. respectively in the two scales. The balance in this fund (including £1203 0s. 10d.) in lapsed members' account, is now £13,371 0s. 8d. The Benevolent Fund has assisted several members during the year, the amount paid out being £82, leaving a balance of £3403 15s. Three members have been assisted from the Convalescent Fund, £6 10s. being paid out. N. N. Sherwood, Esq., and his daughter, Mrs. Campbell, gave £5 5s. each to this fund. There is now a balance of £428 12s. 11d. The management expenses are somewhat heavier than usual, the secretary being paid up to date, which has not hitherto been done; 5000 reports were printed and distributed. It was also the quinquennial year for valuation, the actuary's fee being £12 12s. Balance in hand, £65 4s. 3d. The annual dinner was again a success; G. Monro, Esq., made an able chairman. The committee cordially acknowledges the support of the horticultural Press, for which it returns thanks, and hopes that its assistance may still be continued. The society's accounts were audited by Messrs. G. Dixon, W. Gunner, and T. H. Puzey, and found correct.

Statement of Liabilities and Assets.

LIABILITIES.		ASSETS.	
1901. Jan. 14th.	£ s. d.	1901. Jan. 14th.	£ s. d.
To Benevolent Fund	3403 15 0	By Invests. as per 1900 acet.	15,850 0 0
Convalescent Fund	428 12 11	1900-1 Cardiff Corp. Stock	900 0 0
Management Fund	65 4 3	Nottingham Corp. Stock	650 0 0
Benefit Fund	13,371 0 8		
	17,268 12 10		17,400 0 0
Balance	143 0 6	Cash in hand of treasurer	11 13 4
	£17,411 13 4		£17,411 13 4
Total invested money			£17,400.

Benefit Fund.

Dr. RECEIPTS.		EXPENDITURE.		Cr.	
1900. Jan. 8th	£ s. d.	1901. Jan. 14th.	£ s. d.		
To balance brought forward	12,190 9 2	By sick pay to mems.	301 3 0		
1901. Jan. 14th.		Deductions from mem's			
To interest—	£ s. d.	Rest Fund	26 9 2		
Current mem's	317 4 11	Amounts paid—			
Lapsed	34 5 8	No. 4 from dep. acc.	40 0 0		
	351 10 7	" 14 from dep. acc.	17 0 0		
Subs. of mem's, 1900-01	1,311 13 6	" 40 lapsed members	0 19 6		
" arrears for 1899	35 1 2	" 43	40 4 5		
		" 691 to "nominee"	9 16 1		
		" 255 "	24 7 7		
		" 390 "	20 16 3		
		" 1043 "	2 12 1		
		Interest on lapsed mem's account	34 5 8		
			£517 13 9		
	£13,888 14 5	Benefit mem's 12,167 19 10			
		Lapsed do. 1,203 0 10			
		By balance to date	13,371 0 8		
			£13,888 14 5		

Benevolent Fund.

Dr. RECEIPTS.		EXPENDITURE.		Cr.	
1900. Jan. 8th.	£ s. d.	1901. Jan. 14th.	£ s. d.		
To balance in hand	3209 2 5	By amounts granted	82 0 0		
1901. Jan. 14th.					
To int. on above amount	91 9 3				
Subs. of mem's	94 16 6				
Subs. arrears for 1899	7 2 8				
Subs. of hon. members	56 15 0				
Dedues from mem's' Rest Fund	26 9 2	By balance to date	3403 15 0		
	£3485 15 0		£3485 15 0		

The receipts of the Voluntary Convalescent Fund amounted to £435 2s. 11d. The expenditure to £6 10s., leaving balance to date, £428 12s. 11d.

Management Fund.

Dr. RECEIPTS.		EXPENDITURE.		Cr.	
1900. Jan. 8th.	£ s. d.	1901. Jan. 14th.	£ s. d.		
To balance brought forward	129 8 10	By sec.'s salary for 1899	52 5 6		
1901. Jan. 14th.		Sec.'s salary to Jan. 1901	70 0 0		
To subs. of members	93 14 11	Rent of room for meetings	3 5 6		
Arrears of subs., 1899	6 15 0	Rent of National Safe	1 1 0		
Revocation fees, rules	0 9 0	Postages	14 17 6		
Advts. in annual report	6 11 0	Stationery and printing	37 16 9		
Sale of cert. of membership	7 7 0	Auditor's fees	3 10 0		
Interest on £1203 0s. 10d. standing to credit of lapsed members	34 5 8	Aetuary's valuation fee	12 12 0		
	£278 11 5	Sundry expenses	17 18 11		
			213 7 2		
		Balance to date	65 4 3		
			£278 11 5		

Treasurer's Account.

Dr. RECEIPTS.		EXPENDITURE.		Cr.	
1900. Jan. 8th	£ s. d.	1901. Jan. 14th.	£ s. d.		
To balance in hand	153 14 11	By sick pay from Benefit Fund	301 3 0		
1901. Jan. 14th.		Payments to nominees of deceased members	57 12 0		
Hon. mem's' subs.	56 15 0	Payments from Benevolent Fund	82 0 0		
Benefit mem's' subs. to Benefit Fund	1311 13 6	Payments from Convalescent Fund	6 10 0		
Benefit mem's' subs. to Benev't Fund	94 16 6	Payments from Management Fund	213 7 2		
Hon. and benefit mem's subs. to Conv't Fund	23 11 9	Payments to lapsed mem's	41 3 11		
Benefit mem's subs. to Manage't Fund	93 14 11	Payments from deposit accounts	57 0 0		
Benefit mem's subs. arr's to Benefit Fund	35 1 2	Investments, stamps, and commission, being £1550 stock for	1544 13 0		
Benefit mem's subs. arr's to Benev't Fund	7 2 8		£2303 9 1		
Benefit mem's subs. arr's to Manage't Fund	6 15 0				
Revocation fees, rules	0 9 0	Balance in hand of treasurer	11 13 4		
Advts. in ann. rept.	6 11 0		£2315 2 5		
Sale of cert. of mem'ship	7 7 0				
Return of in. tax, 2 yrs.	29 6 8				
Dividends on invest.	488 3 4				
	£2315 2 5				

March 6th, 1901.

Audited and found correct,

GEO. DIXON
W. GUNNER
T. H. PUZEY

Auditors.

The Annual Dinner Account for 1901 amounted to £38 3s., leaving a balance in hand of 15s. 3d.

Report of Injurious Insects during 1900.—Miss Eleanor A. Omerod, LL.D., has issued the twenty-fourth annual report on injurious insects and common farm pests, and has added notes on their prevention and remedy, numerous woodcuts being inserted along with her explanatory text. The publication is well worth its price—namely, 1s. 6d. We will refer more fully to this booklet in a coming issue.



Fruit Forcing.

Melons.—To secure a good set of fruit on the earliest plants it is necessary to keep the bottom heat at 80° to 85°, with sufficient moisture in the soil to prevent flagging. Activity at the roots is essential to the fruit swelling, and will prevent grossness unless the soil is surcharged with water. It ought to incline to dryness, so as to arrest growth, which centres the forces on reproduction. A rather dry, warm air favours the production of pollen, affording a little air constantly to prevent the deposition of moisture on the flowers. Fertilise the blossoms every day when fully expanded, and stop the growths one joint beyond the fruits. When these commence swelling remove all flowers, earthing the roots by placing warm soil against the sides of the hillocks or ridges, pressing it firmly. Apply water as required; avoid a scalded condition of the soil; sprinkle the floor in the morning and evening, lightly syringing the plants at closing time when the days are bright.

Melons, to swell well, require a night temperature of 65°, or a little more in mild weather, 70° to 75° by day artificially, and 80° to 90° from sun heat. Close early in the afternoon, so as to raise to 90° to 95°, even 100°. This will do no harm provided the atmosphere is moist. If a succession of fruit is wanted in the same house some of the plants should be deprived of the flowers that appear on the first laterals, stopping these at the second joint to cause the sub-laterals to show fruit, which will be several days later, but the fruit will be finer, because the plants are stronger. Quality, however, depends upon the solidification of the growths, this being effected by exposure to light and steady supplies of nutrition. Place supports to the fruits in due course to relieve the plants of the weight. Half-inch boards 6 to 7 inches square, suspended in a sloping direction by four pieces of wire from the trellis, answer well; or squares of garden netting fastened to the trellis by four pieces of string may be used. Make additional plantings, press the soil around each plant, shading for a couple of hours in the middle of the day, discontinuing it when the plants become established. Young plants should be grown near the glass in order to keep them sturdy. Seed may be sown for succession plants.

Vines.—*Earliest Forced in Pots.*—The Vines started last November have the Grapes in the last stages of swelling, and must be well supplied with liquid manure. After the colouring is well pronounced, simple watering suffices, and of that a moderate amount is better than a surfeit. A circulation of warm, moderately dry air conduces to the flavour of the fruit and its colour and bloom, but the atmosphere must not be allowed to become so dry as to invite red spider. The Grapes require some little time to mature after they are apparently ripe; and moderate ventilation.

Moisture without stagnation is essential to their remaining plump and fresh until cut. White Frontignan is now beginning to colour, and is not only the earliest to ripen of all forced Grapes, but is the best flavoured.

Early Forced Planted-out Vines.—Those started early in December and previously forced will soon have the Grapes stoned, and should have liberal top-dressings of fertilisers washed in, or have them supplied in liquid form, even if alternating with liquid manure from stable and cowhouse tanks or manure yard cesspools, for Vines like a change of food; besides, there is not everything they require in sufficiently available form in such liquid. A light mulching of lumpy, partially decayed manure may be placed on the border, especially where the soil is light, though it often does good where the soil is stiff by preventing cracking, as the Grapes swell considerably in the later stages, even after commencing colouring. Allow a little lateral extension, as every leaf has its corresponding root formation, and that leaf fully exposed to light and air helps the Grapes in swelling and colouring.

The Vines not forced before, or started later, will be stoning, this taking place after the first swelling after the thinning, and is perhaps the most important as regards ultimate size in the berries. During the stoning a steady state of affairs is best, giving phosphates, potash, and moderate nitrogen or ammonia, either in liquid form or as top-dressings, these encouraging surface roots more than liquid applications.

Ventilation needs to be carefully attended to, as "rust" comes on Grapes and leaves by sudden depressions of temperature and cold drying currents of air. When sharp north-east winds and bright gleams of sun prevail, the temperature is subject to sudden alternations, which must be avoided by admitting air in small quantities at a time, always previous to rather than after a great rise of temperature, taking care to allow a good advance from sun heat after closing early in the afternoon at 80° to 85°, thus with 90° a long day's work will be secured, allowing the heat to fall to 65° at night, or even 60° when cold. Vines

started at the new year are not good in all places. Some Vines have bunches that twist, twirl, and grow in anything but the right direction, while some are blind. This is a consequence that may arise from want of more time; any way, similar Vines started, or rather starting of their own accord, in March or April do nothing of the kind. Nothing can be done now, as a bunch bent on becoming a tendril will do so in spite of all restraints; but all might have been avoided if the wood had been ripened earlier, or even had the Vines been given more time. Avoid the close stopping system in such cases, yet do not allow more growths than can have room for development.

The Vines that are now in flower should have a rather drier atmosphere with a gentle circulation of air, and a temperature of 65° to 70° at night, 70° to 75° by day, and 80° to 85° from sun heat, maintaining moderate moisture by damping the house two or three times a day in bright weather. Muscats should have at least 5° higher temperature, and the flowers must be carefully fertilised.

Succession Houses.—Disbud and tie down the growths as they advance, stopping to two joints beyond the bunches where the space is limited; but where there is room, allow a greater extension of the shoots before stopping. Remove the laterals from the joints below the show for fruit, except from the two basal leaves, stopping those at the first leaf, and to one afterwards, as produced. The laterals above the fruit may be allowed to make such growth as can have exposure to light without crowding, and then be stopped, keeping them pinched afterwards as space permits, or to one joint where there is not room for extension. Remove all superfluous and ill-shaped bunches of the free-setting varieties as soon as the most promising for the crop can be selected. Maintain the border in a proper state of moisture, and secure a genial atmosphere by damping the house well at closing time, as well as in the morning and evening. A temperature of 60° to 65° at night is suitable after the Vines come into leaf, allowing 65° to 70° in dull days, and 75° to 85° with sun and ventilation, taking care to avoid cold draughts and to close early.

Late Houses.—Vines intended to ripen the fruit in August must now be started, and Muscats, with other late varieties, should be encouraged to move, as the fruit keeps much better when ripened in late August or early in September than when the season is more advanced at the ripening periods. Inside borders need water to bring them into a properly moist condition, but avoid making the soil very wet. The atmosphere must be kept genial, damping the rods and floors two or three times a day, maintaining a temperature of 50° at night, or 55° when mild, and 65° by day with sun. Late Hamburgs may be kept cool, not starting the Vines until April, when they will start naturally. It will suffice if they have the fruit set by early June and the Grapes are ripe in September.

Vine Eyes.—Those inserted last month will now be well rooted, and should be potted singly. Insert in small pots, shift into 5 or 6-inch as soon as the roots reach the sides of the smaller, placing them in bottom heat, or preferably on shelves over the hot-water pipes. Syringe moderately amongst them, pinching the laterals at the first leaf, and if intended for planting out this season, do so before the roots become matted.

Cut-back Vines.—For fruiting in pots next season these Vines will not be fit for shaking out and repotting, or if that has already been done, and the roots have reached the sides of the pots, they will need shifting in the fruiting (12-inch) pots. After potting place along the sides of the house over the hot-water pipes, in preference to a cool bottom, keeping the house close and moderately moist until they become established. Train the canes near the glass, pinching the laterals to one leaf, and thus secure solidified growth and plump buds. Use clean pots and thorough drainage. Turfy loam, with a fifth of old mortar rubbish, answers well for potting; but a pint of dissolved bones (quite mellow), the same amount of soot, and a quart of wood ashes to 2 bushels of the loam, make a deal of difference, failing which, use advertised fertilisers.

The Kitchen Garden.

Potatoes.—Early Potatoes, including the Ashleaf varieties, Ring-leader, Sharpe's Victor, Early Puritan, and Ninety-fold, should be planted now on a warm border. If, however, the sets are sprouted first, the planting may well be deferred until next month, in the meantime keeping the tubers eye end upwards in shallow boxes fully exposed to light. Rub off all shoots but the principal one. The best place for them is a cool house or shed, maintaining them hardy, but preserving from frost. The midseason and late varieties may be planted as opportunity offers and the surface soil works well. Some of the leading varieties which prove good croppers and of excellent quality are Beauty of Hebron, Windsor Castle, Reading Russet, Schoolmaster, Satisfaction, Sutton's Reliance, Up-to-Date, Main Crop, and Magnum Bonum. The ground should previously be well cultivated by deep digging, adding manure if necessary, and well working into the soil. The drills for planting should be drawn 6 inches deep. The distance between them must vary according as to whether the variety is short topped or a long growing. The early varieties are usually the former, and may be planted in rows 2 feet asunder. Sutton's Reliance and Magnum Bonum are usually very strong growers, and nothing is lost by giving them 3 feet between the rows. Place the tubers in the drills a foot

apart for the early varieties and 18 inches for late strong growers. For midseason and all varieties of average strength 2 feet 6 inches between the rows will suffice. One advantage of giving Potatoes plenty of room is that Winter Greens may be planted between the rows, this largely compensating for the extra space occupied. Draw drills with the Canterbury hoe or form trenches of the proper depth with a spade. A sprinkling of wood ashes or burnt refuse spread along the drills is beneficial, as is also superphosphate at the rate of 7 lbs. per square rod, or each row of 30 feet would take a little more than 2 lbs.

Leeks.—A few rows of Musselburgh or Lyon Leeks should be sown moderately thinly, so as to have plenty of plants to draw and transplant in manured trenches, or on rich ground where they will form finer roots than if allowed to remain where sown.

Peas.—Successional sowings of second early Peas should be made. The most approved sorts for present sowing are Advancer, Prince of Wales, Duke of Albany, Telephone, Telegraph, and Fillbasket. Sow the seeds about an inch apart in wide drills 2 inches deep. Be careful to protect the seed from the depredations of mice and birds. For the former rub the seeds in red lead before sowing, which will also be proof against birds, but after germination some more effective protection must be accorded. Wire Pea guards are undoubtedly the best, but failing them lengths of black cotton.

Early Peas raised under glass in boxes or pots must be gradually hardened off prior to planting out, which should be done on a warm border. Short twiggy stakes ought to be placed on each side of rows as protection.

Broad Beans.—Where these are in demand in their season a few more rows must now be sown, the Windsor varieties making a good successional crop to the Longpods.

French Beans.—These can only as yet be sown in pots in heat. Nearly fill 8-inch pots with rich soil and place eight seeds in each pot. Grow them in a temperature of 60° to 65°, and where the light is abundant. As the growth advances place a few light branching sticks round to support the stems.

Tomatoes.—Plants in small pots, and these full of roots, should have a shift to larger previous to planting out or potting finally. When the stems of young seedlings are becoming stiff and rough leaves are forming, transfer to small pots, sinking them low down so as to bury the stem with soil to the seed leaves. Abundance of light on a warm shelf is essential for the plants in the early stages. Air, too, must be afforded freely as the plants increase in size, as well as cooler conditions secured. To draw the plants and make them long-jointed is inimical to their welfare.



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Hard Woods of Paraguay (H. Piggot).—By referring to the Journal of the Society of Arts for September 14th, 1900, you will find the article on the "Hard Woods of Paraguay."

Basic Slag (M. T.).—This is the waste product obtained by smelting of iron, when the phosphorus is removed from the same by a certain process. When intended for use as a manure it is ground to a powder, and its value lies in the percentage of phosphates it contains. A good sample should contain fourteen to eighteen per cent. of phosphoric acid. The more finely it is ground the more easily available it is for plants.

Cleaning Stone Pillars (C. W. P.).—Muriatic acid is excellent for cleansing stone pillars. The acid should be diluted with water, but if the green has become thoroughly established on the stone you had better use the acid almost pure at first, which will destroy the whole of the green, and the pillars in a few minutes can be washed white. If the pillars are not very badly affected equal parts of the acid and water will clean them thoroughly; but this entirely depends upon the stone, whether of a hard or soft material. If hard the acid must be used stronger than is necessary when the stone is of a soft nature. The diluted acid can be applied with an old scrubbing brush, but care must be taken that it does not get upon your clothes, or it will burn and destroy them.

British Coniferæ (D. T. J.).—We have inquired from one in a position to know whether any statistical list of the British Coniferæ has been drawn up since the late Mr. M. Dunn issued his, and our authority is unaware of any succeeding list.

Tree Carnation Bloom (W. H.).—The flower you send is good so far as colour goes, and the wavy margin of crimson to the edge of the yellow, russet-tinged petals adds much to its attractiveness. The calyx, however, had burst, and that is a bad attribute of a Carnation bloom. Its scent was agreeable. For ordinary decorative uses it is a good variety.

Trimming the Roots of Asparagus Plants at Planting (W. B.).—Though it is advisable to cut away all the broken or otherwise damaged roots, or portions of them, it is not safe, or at least not good practice, to trim the sound fresh roots, as on these depend a vigorous growth of "grass," the roots supplying some nutrient matter and imbibing substance that is necessary for assimilation in the early stages of growth, on which depends the formation of new roots. It is not good practice to plant four-year-old roots. One-year-old grown rather thinly are the best, and not over three-year-old plants should, according to our experience, be planted. The roots should be placed astride of a ridge formed by taking out a trench on both sides of a line, and the roots spread out evenly against the banks or slopes thus made, covering the crowns about a couple of inches with soil. The plants will thus stand rather high or in ridge-like fashion, and this we find most satisfactory, especially on rather damp ground.

Flies to Name (P. K.).—The flies are the females of the Radish fly (*Anthomyia floralis*), which not only attack the Radish, by no means a common occurrence, except in the case of plants left for seed, to which the maggots are destructive about flowering stage, but many Cruciferous plants, especially the Brassica tribe, such as Cabbages and more particularly Cauliflowers. The attacks are more prevalent on ground that has been recently manured with new stable or farmyard manure, consequently in a rank state, it being certain the maggots subsist on decaying as well as living vegetable matter. The best preventive of attack is dressing the land with gas lime, fresh from gas works, applying 2½ tons per acre, 35 lbs. per rod, spreading evenly on the surface, and leaving there for a month or six weeks, then forking in. A dressing of lime is also excellent, and should be used where gas lime cannot be readily procured, applying 5 tons per acre, 70 lbs. per rod, placing the quicklime in small heaps convenient for spreading, and slaking with the smallest amount of water necessary to make it fall into a fine, apparently dry powder, and spreading whilst hot or as soon afterwards as possible, choosing a dry time. In the course of a few days the lime should be forked in.

Spraying Mixture for Chrysanthemum Rust (X. L.).—The formula given on page 178 is an excellent one for all general spraying purposes, not being by any means new, except in the preparation, which results in a much thinner and clearer mixture than ordinary Bordeaux mixture, to which it is much preferable, on account of not leaving any appreciable discoloration on leaves and fruit. It will certainly act on Chrysanthemum rust fungus preventively, and restrict the spreading of the disease; but it has little or no effect on the mycelial hyphæ in the tissues, therefore the pustules of the parasite continue to appear after the treatment, and even on fresh leaves, this being a peculiar characteristic of the Puccinias, through the mycelium developing and spreading in the tissues, usually upward, and not breaking forth in the uredo stage until favourable conditions arise. It is necessary, therefore, to remove affected leaves, as well as practise persistent spraying after attack, in order to effect the annihilation of the fungus. Indeed, it cannot be too strongly impressed that the treatment with fungicides is wholly preventive; no applications after attack do more than preventing the spread of the malady. The mixture will not act destructively on the spraying apparatus.

Hæmanthus coccineus Treatment (W. W.).—The bulbs should be potted in a mixture of sandy loam two parts, and fibrous peat one part, the pot being about three times the diameter of the bulb, and this placed in the soil level with the surface, or quite buried in the compost. Good drainage is necessary, as during growth the plant requires plentiful supplies of water, though excessive watering is very prejudicial. It succeeds in what is termed a warm greenhouse or cool stove, for though cool treatment is often advised, the plant does not succeed as a cool greenhouse bulb, but requires a temperature of 50° to 60° during the growing season. The flowers, borne in an umbel, appear before the leaves during late summer or early autumn; and it is important that the plants have a period of growth after flowering, followed by one of rest. The plant, therefore, should be kept in a light position during the winter or when growing, duly attended to for water, and when in full foliage afford support by weak manure water. When the plant has made a good growth water should be given less freely, and when the leaves give indications of decaying or dying off the water should be gradually withheld, and left off altogether by the time they have died. It flowers most freely when under rather than overpotted, and for this reason it is not necessary to shift it every year, or at least not increase the size of pot. Potting is best done when the plant is commencing new growth. When at rest the plant will receive sufficient moisture if kept on a rather damp but not wet bottom, having recourse to watering when flower scapes appear or new growth is being made.

Clipping Ivy (F. G. D.).—We would not advise you to prune until about the first week in April. If you clip the Ivy now the walls will appear unsightly for many weeks longer than they would do were you to shear-off the old foliage just prior to the time when the new growth will have started. There is then no "gap," as it were, for fresh green leaves immediately take the place of the old ones.

Manuring Narcissi (X. L.).—If the soil is as poor as you state it to be the only way to help the Narcissi is to apply an artificial manure. The amount of bonemeal you name is none too much, and it will go a long way. Basic slag, however, would act more speedily. As the plants are now a considerable size you will have to scatter it amongst them, choosing a showery day if possible for doing so. It is too late to apply nitrate of soda.

Standard Crittenden Damson Trees not Satisfactory (W. W., Berks.).—Instead of pruning the heads of trees that are healthy and make a good deal of spray, but fruit very indifferently, it would be advisable to root-prune them, taking out a trench 3 or 4 feet from the stem, and severing some, if not all, of the thickest roots found there, afterwards filling the trench firmly. This would check the undue vigour, which is probably the cause of the indifferent bearing, and induce shorter growths, with a plentiful number of fruit spurs. It is not advisable to prune the heads of standard trees to any great extent, merely thinning where the growths are crowded, removing branches crossing each other, and judiciously shortening straggling parts, so as to keep the head fairly open and evenly balanced. The root-pruning may yet be performed, but operate with as little delay as possible.

Passion Flower not Flowering (Idem.).—If the growths are cut back to a bud or two of their base the growths from this ripened wood ought to flower during the summer, provided they are trained rather thinly. The pruning should be done during next month. As the growth is so free it would also be advisable to take out a trench about 2 feet from the stem and as deeply as the roots, so as to sever them, filling in the trench firmly. This ought to result in a sturdy and floriferous growth.

Pruning Clematis montana (Idem.).—The pruning should be confined to removing the weak and overcrowded branches, but as your plants are becoming exhausted they should have all the weak as well as dead wood cut away, shortening some of the branches to near their base, and thus giving space for young, vigorous growths, and these, well ripened, will give garlands of flowers on branches several feet in length another season, the unripe wood only being cut off.

Rusty Spots on Vine Leaves (V. Z.).—The leaves you sent were badly affected with warts; but we have seen worse specimens without having detected any great harm from the same. The warts, as you may notice, are green, and that some of them are dying, giving the leaves a rusty appearance. Warts are nearly or always caused by too moist and stagnant an atmosphere. To remedy this you will have to ventilate a little more freely, though cautiously all the same, and the syringing must not be carried out oftener than twice on bright days, and once, with a good damping down, on dull days. It is a penny wise pound foolish policy to keep houses very close in order to economise the coal bill. It cannot be kept up with justice to Vines. The Vine foliage should always be thoroughly dry at least once in the twenty-four hours. The middle of the day is the best time for this. The leaves will then become tough and strong to resist disease or pest.

Names of Plants (H. W.).—1, *Dendrobium Wardianum* var. *candidum*; 2, *Dendrobium nobile*, good form.

Next Week's Events.

Thursday, March 21st.—Linnean Society committees' meeting; Royal Botanical Society meeting; "Hurst & Son" Musical Society (Ladies' Evening Concert), Council Chamber, Holborn Restaurant.

Trade Catalogues Received.

Ellwanger & Barry, The Mount Hope Nurseries, Rochester, New York, U.S.A.—*General Catalogue*.

Otto Katzenstein, Pinehurst Nurseries, Moore County, North Carolina, U.S.A.—*Woody and Herbaceous Plants and other Ornamentals*.

E. H. Krelage & Son, Bloemhof Nurseries, Haarlem, Holland.—*Catalogue of Novelties, Begonias, Cannas, Herbaceous Perennials*.

Thos. S. Ware, L'd., Hale Farm Nurseries, Feltham, Middlesex.—*Hardy Plant Catalogue*.

Gardeners' Provident and Charitable Institutions.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.

Covent Garden Market.—March 13th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, cooking, bush. ...	2	6 to 7	Oranges, case ...	6	0 to 15
" Californian, case ...	7	6	Pears, crate ...	3	0
Apricots, Cape, box ...	8	0	" stewing, case of	4	6
Cobnuts, doz. lb., best ...	4	0	" 72 to 120 ...	15	0
Grapes, black ...	0	6	" Californian, case	9	0
" Dutch, lb. ...	0	6	" 1/2 case ...	1	6
" white, per lb. ...	1	6	Pines, St. Michael's, each	1	6
Lemons, case ...	9	0			

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	6 to 3	Greens, bush. ...	0	6 to 1
" Jerusalem, sieve	1	6	Herbs, bunch ...	0	2
Asparagus (Spruce Grass)	0	6	Leeks, bunch ...	0	1
" English, 100 ...	7	0	Lettuce, doz. French ...	0	8
" Giant, bundle ...	15	0	Mushrooms, forced, lb. ...	0	8
" Spanish, bundle ...	1	6	Mustard and Cress, pint	0	2
" Paris Green ...	5	0	Onions, Dutch, bag ...	3	6
Batavia, doz. ...	2	6	" English, cwt. ...	5	0
Beans, French, per lb. ...	1	0	Parsley, doz. bnchs. ...	2	0
" Jersey, per lb. ...	2	0	Potatoes, cwt. ...	3	0
Beet, red, doz. ...	0	6	Radishes, doz. ...	1	0
Broccoli, bush. ...	0	6	Rhubarb, doz. ...	1	2
Brussels Sprouts, sieve ...	1	0	Savoy, tally ...	4	0
Cabbages, tally ...	3	0	Scotch Kale, per bushel ...	0	6
Carrots, doz. bnch. ...	2	0	Seakale, best, doz. ...	12	0
Cauliflowers, doz. ...	1	6	" 2nd, doz. ...	6	0
Celery, bundle ...	1	0	Shallots, lb. ...	0	4
Chicory, Belgian, lb. ...	0	4	Spinach, bush. ...	4	0
Corn Salad, strike ...	1	0	Turnips, doz. ...	2	0
Cucumbers, doz. ...	4	0	Turnip tops ...	0	9
Endive, doz. ...	1	3	Watercress, doz. ...	0	8

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Asparagus, Fern, bunch	1	6 to 2	Maidenhair Fern, dozen	4	0 to 8
Carnations, 12 blooms ...	2	0	bunches ...	4	0
Cattleyas, doz. ...	10	0	Mimosas, bnch. ...	1	0
Daffodils, doz. ...	6	0	Odontoglossums ...	4	0
Eucharis, doz. ...	4	0	Roses Tea, white, doz. ...	1	0
Gardenias, doz. ...	3	0	" yellow, doz. (Perles)	2	0
Geranium, scarlet, doz.	8	0	" red, doz. ...	6	0
bunches ...	8	0	" Catherine Mermet,	6	0
Hyacinths, doz. ...	4	0	doz. ...	6	0
Lilium lancifolium album	3	0	Smilax, bunch ...	3	0
" rubrum	3	0	Tulips, yellow, doz. bnchs.	6	0
" various ...	4	0	" white ...	8	0
Lilac, white, bunch, ...	3	0	" red ...	6	0
Lily of the Valley, 12 bun.	8	0			

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acers, doz. ...	12	0 to 24	Foliage plants, var., each	1	0 to 5
Arbor Vitae, var., doz. ...	6	0	Geraniums, scarlet, doz.	6	0
Aspidistra, doz. ...	18	0	" pink, doz. ...	8	0
Aspidistra, specimen ...	15	0	Hydrangeas, white, each	2	6
Azaleas, various, each ...	2	6	" pink, doz. ...	12	0
Boronia, doz. ...	20	0	" paniculata, each	1	0
Cannas, doz. ...	18	0	Lilium Harrisii, doz. ...	8	0
Crotons, doz. ...	18	0	Lycopodiums, doz. ...	3	0
Dracena, var., doz. ...	12	0	Marguerite Daisy, doz. ...	8	0
Dracena, viridis, doz. ...	9	0	Mignonette, doz. ...	8	0
Erica, various, doz. ...	8	0	Myrtles, doz. ...	6	0
Euonymus, var., doz. ...	6	0	Palms, in var., each ...	1	0
Evergreens, var., doz. ...	4	0	" specimens ...	21	0
Ferns, var., doz. ...	4	0	Roses, doz. ...	6	0
" small, 100 ...	4	0	Stocks, doz. ...	8	0
Ficus elastica, each ...	1	6			



The Price of Seeds.

THE profits of agriculture are so small, and the difficulty of even making ends meet such an ever present one with the farmer, that it is but natural for him to resent any increase in price of any commodity which he purchases, as tending to still further diminish those profits or increase that difficulty; but there are circumstances under which, and to make the best of them, it is wisest to look facts calmly in the face and avoid the penny-wise pound-foolish policy.

The season of 1899 has left a lasting mark in several ways. The generally poor sheep pastures of last season will probably be reflected in correspondingly poor crops of grain, which follow them in the course, unless the farmer has been, or will be, wise enough to assist the impoverished land with applications of muck or artificials. By impoverished land we are but speaking relatively, and in comparison with such as may have borne a good yield of Clover and carried a good stock of sheep. But the bad yield of seeds which resulted in 1900 from the unfavourable seed-time of 1899 is reflected again in the price of Clovers and Grasses during the present season. These very necessary seeds have, after a period of cheapness, been gradually growing dearer again, and are now approaching the top of the record. Good English stocks are very scarce and very dear, and how things would be were it not for a fairly good supply from abroad we hardly dare contemplate. Prices for Red and White Clovers are very variable, ranging from 6d. to 1s. and upwards per lb., the price of really reliable seed being not less than 9d. or 10d. Anyone buying below these prices is running great risk of losing his Clover stock. If we had a choice of evils we would rather give 1s. per lb. for a first-class English sample than run the risk of disappointment for the sake of three or four shillings per acre. For, remember, it is not only the Clover crop that is at stake, but upon it so largely depends the success of the rotation.

There are many rumours in circulation detrimental to the character of the Grasses offered this season, and it is very desirable that in purchasing Rye Grass the weight per bushel should be sufficiently taken into consideration, and a fairly high standard of guarantee be insisted on. Perennial Rye Grass should weigh 24 lbs. per bushel; Italian, 21 lbs.; and Pacey's Perennial, 26 lbs. Remember that good seed not only gives a better plant at first but one more capable of standing the test of a severe winter, and one which will grow more vigorously and give a more abundant crop. Farmers will buy selected seed Corn, but few can see the advantage of selected Clover. We have, and we know that a good stock of Giant White will carry 50 per cent. more ewes and lambs than an ordinary stock of White. The difference in price is 1s. 6d. per stone.

The relative cheapness of foreign "reds" is having an effect on the price of English Clover, which is dropping, and we strongly advise our friends to buy English at present prices, but if it must be foreign, then we prefer Canadian. Lowland Dutch does well on hot sandy soils, as the change of soil and climate is suitable. Alsike is dear, and except on light soils, where White Clover does not stand well, we should not care to use much of it. It has been very useful the last two or three years, as it has never been big enough to be a nuisance amongst the Corn; but if we were to have a moist growing summer, those who have sown much Alsike might be regretting it at harvest time. Green stuff half-way up the sheaf is a strong drawback to the use of the self-binder.

Cow Grass is also very dear, more so than the best red; and here again there can be no advantage in giving the higher price, for if on some soils Cow Grass stands a little better and brings a heavier crop, it is certainly of less intrinsic value, and is also more difficult to secure in the best condition. The advance since last year in the values of Turnip seeds, especially Swedes, is very remarkable. A reference to the price lists of a few of the leading seed firms discloses the fact that they are asking practically double the usual price for Swede seeds, and 25 per cent. more for common Turnip and Mangold than they did in 1900. Farmers will have to pay from 1s. up to 1s. 9d. per pound for reliable stocks of Swede, 10d. per pound for Turnips, and 1s. to 1s. 3d. for Mangold. Some standard varieties of Swede are so scarce as to be practically unobtainable for anything but seed-growing purposes, and in many cases farmers will have recourse to try new varieties, because they cannot meet with a supply of the old favourites. Purple tops of the Elephant and Monarch type have suffered severely, and they are figured at the higher rates. Bronze tops on the other hand, as also green tops, are comparatively cheaper and more plentiful; and the fact of their having better survived such a disastrous season as that of 1899 is certainly some recommendation to growers who like hardy kinds.

The Golden Melen is a great favourite with many farmers, and rightly so; there are bronze-top Swedes, however, sent out under other names which are equally good and are practically selections from the same Swede. It is rather a puzzle why so many people grow such watery poor quality Turnips as the Greystone and Mammoth, especially for early consumption. They certainly grow quickly and therefore may be of use for late sowing too late for other kinds, but we fancy if Fosterton Hybrid Yellow were once used for the first sowing it would take a great deal of knocking out again.

Green Globe as the common Turnip *par excellence*, may be sown early and late, and is never out of place, but we like the Fosterton for the first eating. It has a stronger top, and stands hot weather better

than the Globe, and is quite equal to it in quality of flesh if not superior. We should not recommend it to stand frost so well. As long as these two Turnips keep their good qualities there is no need for any others. The prices of the minor seeds such as Cabbage Rape, &c., are more normal, and do not call for special comment.

We doubt not that attempts will be made to palm off inferior stocks of old Swede seed at moderate prices as being direct from the grower to the consumer, and therefore cheaper. Care must be taken to test the truth of such statements before purchasing, for the supply of good seed has been so small, and has been so closely bought up by the leading seedsmen, that it will not be necessary for the growers to seek any other market; and in conclusion, we must beg of our readers not to be penny wise and pound foolish, but, under the special circumstances of the case, go to a good firm and be sure of getting a good article, even if it is at a high price. Remember that when the seed is good a less quantity will do, and do not risk a bad crop of roots for the sake of a £5 note.

Work on the Home Farm.

Jupiter Pluvius is still the reigning monarch, and little or no progress has been made during the past week. Farmers may already be heard recalling experiences of the spring of 1896, when weather similar to the present was followed by a sudden drought, heavy land became somewhat like a brickfield, and the sowing of spring Corn was almost impossible until the necessary rain came in May. It is to be fervently hoped that this year the change of weather may be more gradual.

Sheep on Turnips are in a parlous state, worse than ever, if that be possible, though we have not heard of carts being used to remove them from one fold to another, as has been done. Lambing proceeds rapidly, as is generally the case in rough and wet weather. Pairs are much more plentiful than last year, and although there is more loss amongst the ewes, there is not more than an average one. Lambs are coming strong, and ewes are milking well, so we may call the prospect a good one.

Horses cannot get upon the land at all, for it would be madness to attempt anything with the soil in its present state. Delivering grain and carting compost on to grass is the only occupation for them. Farmers who have purchased their artificials are getting them in.

A supply of superphosphate having been procured, the fowl and pigeon houses may be once more cleansed, and the manure mixed with super, 4 cwt. of the latter to a cartload of the dung. Mauv mixtures are recommended for Mangold, but nothing beats this one as a foundation to apply before the seed is drilled at the rate of a cartload per acre.

Straw is a rapidly diminishing quantity, and it will be necessary to have the cattle out to grass very early this year. Store beasts may be seen out during the day in many places even in this (Hull) arable district; straw is being saved, and the animals are hardened for the time when they must lie out altogether.

The weather suits the autumn planted Cabbage, and they are growing well. Five hundredweight of soot per acre is a good thing for Cabbage, and helps to keep off ground game where it is troublesome.

It will soon be time to sow a few spring Vetches, in fact as soon as the weather will allow, but if autumn Tares are available we should prefer to sow them instead if they can be got in at once; they do not grow quite so rapidly, but they make much better fodder.

Wheat Growing.—The question is sometimes asked, Why are British farmers unable to grow Wheat sufficient to feed our people? The answer is simple and not far to seek—because it will not pay the English farmer to do so. Prices have sunk to a non-paying point owing to a variety of causes, but chiefly to the increased area of land brought under Wheat cultivation in other countries; land which is practically rent free and unlimited in extent, to the great improvement in farm implements and machinery, to the enormous grain stores on the other side of the Atlantic, to the gigantic ocean steamers with improved methods of propulsion and increased carrying capacity; in short, to the cheapness of production and the reduction of freights. How then can the English farmer compete at all with foreigners in the growth of corn? This question brings its own answer—viz., by increasing the yield and decreasing the cost. How the yield was to be increased was pointed out by Mr. T. R. Garton of the Agricultural Experimental Grounds, Newton-le-Willows, in a lecture before the members of the North Lancashire Farmers' Association, a short while ago. Mr. Garton strongly advocated high cross-breeding between the best varieties of Wheats. The yield in the cases of improved varieties has been as much as 40 per cent. greater than what had previously been recorded. If the cross-breeding and other experiments are carried on the discoveries should go far towards rendering corn and Wheat growing once more profitable in this country.

the extent of making it appear quite white with them at times. In some gardens hotbeds enclosed by walls are still employed in houses, much as they were when house culture first came into vogue. Undoubtedly this kind of bottom heat does give the plants a strong start, but the manure in such positions decays very rapidly, becoming a mass of humus long before the Cucumber plants have passed the period when they might reasonably be expected to be played out. Many of the Cucumber roots take possession of the manure when in a comparatively fit state for them to occupy, only to perish when it is too rotten and sodden to keep them alive. For this hotbed of manure, or manure and leaves, a deep bed of soil over bottom heat pipes nearly, or quite on the floor level, is sometimes substituted, and this again may easily become unfit for the roots, especially if as much water is applied as Cucumber plants are supposed to require. Perhaps I shall be told that in previous remarks on Cucumber culture abundance of water has been considered absolutely necessary, and so it is under certain, but not all and sundry, conditions.

It is readily conceded that the other extreme of having shallow beds or mounds of soil immediately over hot-water pipes, and not giving enough of water, will not long support Cucumber plants. On the contrary, these conditions are most unfavourable, quickly leading to an attack of eelworm at the roots, red spider on the leaves, and a general collapse. Bottom heat may be thought desirable, but when it is both direct and excessively dry it may easily do more harm than good. I am under the impression that market growers dispense with bottom heat pipes altogether, depending rather upon abundance of top heat, in particular avoiding low night temperatures. Cucumber roots apparently must have abundance of heat, air, and moisture. Exclude them from either of these elements and they will not thrive. All can be assured easily enough. First, provide a sufficiency of hot-water pipes to maintain a night temperature of, say, 65° to 70° without hard firing, increasing 5° to 10° in the daytime with or without the aid of sunshine; secondly, employ a porous compost, commencing with small heaps, and adding more as required; and thirdly, apply water or clear liquid manure as often as the soil is found approaching dryness, even if this does mean two applications in a day.

Where the bulk of the hot-water pipes are disposed under slate-covered stagings, supported by bricks or iron pillars, this serves to keep the soil for Cucumbers overhead comfortably warm; but market growers cannot afford such arrangements on a large scale, and the beds are usually enclosed by brick walls, the paths being sunk between these, while the hot-water pipes are principally resting on these enclosing walls and against the brick sides. In places where bottom heat pipes were at first provided they have since been taken out, or else the heat is turned off soon after the plants are well established in the soil, owing to their injurious effects, more especially as regards drying the soil and encouraging the rapid spread of eelworms. It is not asserted that all the mistakes are made by private gardeners and none by market growers, but it is an indisputable fact that the latter class are the most ready to profit by their own or other people's blunders. We all ought to be ready to unlearn as well as to learn, one condition in many cases being the precursor to the other. Thus a grower on a large scale, with whom I am acquainted, has at the present time four span-roofed houses, each 150 feet long, planted with Cucumbers that have started very badly indeed. The soil used was too clayey, and not sufficiently prepared for early Cucumbers. He will never repeat this costly mistake. Comparatively light fibrous loam, chopped up roughly, with or without the addition of manure of any kind, is suitable for starting the plants in; that is to say, it is sufficiently porous to admit the warmth and air into the centre, and can easily be enriched when this is thought expedient. If heavy soil only is available, with or without fibre (and the latter is by no means indispensable), this should be rendered fit for Cucumber roots by the free addition of good leaf soil and "burn-bake"—the name frequently given to the residue of a "garden smother," or smothered fire, that most practical gardeners keep going for weeks together every autumn. Porosity must be insured, and this well-charred refuse is admirably adapted to the purpose. Failing leaf soil, substitute Mushroom-bed manure rather than the more rotten hotbed manure, to be found in most frame grounds at this and other times of the year.

Start with a peck of soil for each plant rather than a bushel or solid bed, and add more as fast as the compost becomes well occupied by roots. If this thin addition of soil is made every week it will not entail a great amount of labour or the employment of much soil, and

it will have the effect of keeping the roots active near to and on the surface. When the sides of the houses are glazed more sun is liable to reach the mounds or ridges of soil than is desirable, and a heavy shading of limewash should be applied by way of moderating the sun's rays, but the brick sides of market growers' houses obviate the difficulty. In some instances the exposure is so great that a mulch of some kind has to be applied to protect the surface soil and roots, nothing answering better or even so well as fresh leaf soil, while strawy litter is better than half-rotten manure.

When the roots of strong plants that are expected to produce Cucumbers freely are confined to small mounds or ridges of soil, something stronger than water must be given rather frequently. This, however, for reasons that will be gathered from what I have already given, must be of a clear nature. Anything that will clog the surface, such as thick or unstrained soot water or thick farmyard drainings, are about the worst kinds of liquid manure that can be applied to Cucumber roots. Clear soot water is right enough, and so is nitrate of soda not exceeding one-half ounce to the gallon of water, and the special manures advertised by various vendors, whether applied as directed in the form of occasional soil surfacings and washed down, or else dissolved, and duly diluted with water and applied, are equally efficacious.

High temperatures must invariably be accompanied by abundance of moisture in the atmosphere, and it is in this direction where market growers with their sunken ash-covered paths have the advantage over private growers, who too often have to contend with brick pits and paved floors, that absorb much of the moisture from the atmosphere that ought to be available for the Cucumber plants. On very bright days high temperatures and but little moisture in the atmosphere mean either burning of the leaves or a bad attack of red spider. Applying more air is a way out of the difficulty that Cucumber plants do not appreciate. A light shade and frequent syringings of the plants, never allowing the leaves to become dry, and surroundings, is more to the purpose.

According to my experience private gardeners are apt to keep their Cucumber plants about too long. It is very creditable doubtless to be able to preserve the plants in a healthy productive state all through the spring and summer months, but I find it pays better and is most satisfactory in the end to put out two or three successional batches of plants, cropping these quickly and to their utmost extent till they give signs of failing, by which time the successional plants ought to be in readiness to carry on the supply of tender, eatable, wholesome Cucumbers, because quickly produced by healthy plants. —W. IGGULDEN.

Fragrance.

"In all countries, civilised and savage, in the religious festivals of all creeds, and upon all occasions of grief or rejoicing, the odoriferous properties of flowers, leaves, or wood have had an important significance; whilst the earliest records we have of perfumes tell of their extraction from fragrant juices or resinous gums, which exude naturally or by incision from trees and shrubs. The fondness of the early Eastern nations for sweet odours and perfumes seems to have been carried to almost extravagant excess, and the antiquity of the custom defies research into its origin. In hot climates the use of fragrant oils and other perfumes has always been a necessity, and there is no doubt that the adoption of sweet odours in religious rites generally had its origin in sanitary precautions.

"The ancients, moreover, had no soap, or at least were not familiar with its use, except as a sort of pomade, and were driven therefore to adopt the use of substitutes, in the form of ointment and other preparations of all kinds of odoriferous gums and resins, and the custom is to this day carried out in the ablutions of the wealthier classes in the East and in the washing of the dead. Their gardens appear to have been chiefly used as resorts for repose and indolent recreation. In these retreats the greatest rulers and warriors found rest and peace amidst the fragrant bowers and aromatic herbs when worn out with the fatigues of their high position.

"The Jews seem to be the oldest nation to have taken the fullest advantage of the great opportunities they had for obtaining a knowledge of plants, and many are the references recorded of the fragrant trees from which they produced cooling fruits to allay thirst, odorous herbs to give tone to the system, and aromatic substances for embalming the dead.

"Both Persia and Egypt appear to have continued the customs in an intensified degree, for not only do they still wash the bodies of their dead with fragrant oils, but the funeral pyre oftentimes consists of aromatic herbs and branches of trees that give off terebenthinate odours."—(From an Essay by D. McD.).

*Odontoglossum crispum* var. *Queen Empress*.

OUR illustration of this exceedingly handsome variety of *Odontoglossum crispum* (of the roseum section) fully presents the immense size and grand effect of the individual flower. The Orchid Committee of the Royal Horticultural Society unanimously awarded a first-class certificate to it when W. Thompson, Esq. (gardener, Mr. W. Stevens), of Walton Grange, Stone, Staffordshire, presented it before them on the 12th of this month. The spike bore nine such flowers as the one here illustrated, each being strong and very substantial. Besides having the advantage of size and good form the colour is also especially fine. The lip is almost white, and has a bright yellow disc, which makes an admirable contrast to the deep rose petals. There are few varieties of *O. crispum* that equal this one.

Cœlogyne pandurata.

I saw a nice healthy plant of this in full flower quite recently, and I do not remember having seen it before so early in the year. The flowers are very telling in their tints of black and green, and most people admire them. Its culture is rather more difficult than that of others in the genus, as it is of very rambling habit, and soon grows out of an ordinary pot. The specimen referred to was growing in a long wooden trough, and this seems very suitable for its culture, as it allows for free extension of the rhizomes.

Angræcum eburneum.

There are few more easily grown Orchids than this, the very vigorous habit and free rooting propensities tending to this end. If a fault can be found with it, this is the rather stiff character of the flowers; but the lovely pure white of the inverted lip, and the fact of its lasting for many weeks in good condition, are all in its favour. It will thrive in any warm moist house, and a little fibry loam should be mixed with the sphagnum and charcoal or ballast when preparing the compost. Use large pots, and water freely at the roots and maintain a moist atmosphere; the plants will then be sure to do well. The smaller growing variety, *A. e. virens*, is most suitable for small collections.

Dendrobium undulatum.

Although a pretty and distinct species, this *Dendrobium* is not often seen. The reason probably is that in many places where it has been tried it has not proved very tractable. Its nearest ally is perhaps the Bull's-head Dendrobe, *D. taurinum*, than which it is lighter in colour, though it possesses the peculiarly formed upright sepals. The most likely place for it is with *D. Phalænopsis* and other Australasian kinds, and it should be grown in a small amount of compost in suspended pans with perforated sides.

Cool House Orchids.

As the days lengthen and the light increases the house devoted to cool Orchids gets daily more attractive, both on account of the

number of flowers produced and the progress the plants are making. *Odontoglossums* and kindred plants that were repotted in September have, if they are in a satisfactory condition, made good progress at the roots. The latter will be pushing well in the new compost, and will aid the forming of growths and flower spikes materially. Both on this account, and also because of the increased air circulation now possible, more moisture will be needed.

Anyone acquainted with their habits can hardly go wrong in the watering now, but it is vexing to go into some collections, where those in charge should know better, and see the plants. They are never dry, they are never really wet, but the surface of the compost, owing to the constant dribblings of water given, is at all times in a moist and sour condition, while below and amongst the drainage the roots are absolutely dry. Now it must be obvious to anyone who thinks, that such a state of things as this would not be possible were the plants growing naturally on their host trees. At times they must be very dry, while at others the drenching tropical rain must so thoroughly soak everything around them, and render the atmosphere about them so very moist, that every part of the plant is wet alike.

We need not follow this in its entirety, but it will be quite wrong to go to the other extreme and give each plant a little every day, just because the time for doing so has arrived. Circumstances are not always alike, and plants in a small narrow house, where the first move of the top ventilator empties it of atmospheric moisture, will need attention much oftener than others growing under a broad flat roof. But in any case it will be found an advantage to occasionally allow all Orchids to become thoroughly dry, before giving a soaking that will moisten every part of the plant and compost. Plants so treated make a more solid, hard growth, and are better in health than specimens coddled by moisture. Roots of the right sort will be put forth to look for it, and the plants will be more satisfactory in every way.

There may have been some plants that for various reasons were not pulled about at the roots in the autumn, and although I am not an advocate for disturbing *Odontoglossums* at this time of year, yet any

in bad condition may have attention. Also any plants that are outgrowing, say a 3-inch pot, may have a good shift into the 5-inch or 6-inch size. The progress when a plant reaches this stage is usually more rapid than before, consequently there is less danger attending the shift, provided, of course, watering is judiciously done.

Cleaning, too, will claim attention, for the late spring and summer are busy times with Orchids, and insects left by chance now increase rapidly. Gentle fumigation with West's extract of nicotine, or some such excellent preparation, should precede sponging with soft soap for such delicate and easily injured plants as *Masdevallias*, *Colax jugosus*, and others prone to the attacks of thrips. Where gentle means prevail now much more drastic measures will have to be taken later if these are neglected. And, besides the plants, it is very important that the houses are kept clean and free from litter. Discarded pots, crocks, odiments of peat and moss, or dead leaves lying about, all form fine cover for night marauders, such as woodlice, snails, and cockroaches; but keep the house cleaned up daily and these are usually conspicuously absent, to the great advantage of the forming growths and flower spikes.

One more point, never allow weak plants to carry their flowers too long. In some cases it is best to pinch the flower spikes out at once, but if it is specially desired to see what a variety is, then remove all but one, or at most two flowers, from the spikes before they open.



ODONTOGLOSSUM CRISPUM VAR. QUEEN EMPRESS.

Odontoglossum Edwardi.

Fragrant *Odontoglossums* are not uncommon, but an *Odontoglossum* with rich purple flowers produced on long elegant scapes, and sweetly scented, is rare; it is practically unique, in fact there being but the one, *O. Edwardi*. Discovered in Ecuador by Mr. Edward Klaboch, it was sent to this country twenty years ago, and from the first has been a favourite Orchid with all classes of growers. The habit is stronger than that of most others in the genus, being not unlike a bronzed-looking form of one of the scandent flowering *Oncidiums*, such as *O. undulatum*.

The roots, too, are large and rather fleshy, liking a more roomy pot than *O. crispum* and its allies, also a rough and open compost. The new pseudo-bulb usually rises considerably higher than that immediately preceding it, this making it necessary to top-dress the plants annually in order to bring the bases of these in contact with the compost. Having this in mind the compost should be thin at first, nearly filling the pots with crocks for drainage, and when applying the top-dressing it is well to remove as much as possible of the old peat without disturbing the healthy roots, its place being taken by crocks before putting the layer of compost on the surface.—H. R. R.

It is now about twenty years since this was first flowered in England, and it has become fairly popular both on account of its uncommon colour and its good constitution. It is a native of Ecuador, and was first discovered by Edward Klaboch. The pseudo-bulbs are almost oval, and 3 or 4 inches long; from the top two dark green strap-shaped leaves a foot to 15 inches long are produced. The flower spike is pushed up in early spring, and rises almost erect to a height of a foot and a half on strong plants. The flowers are small, but borne freely. They are three-quarters to an inch across, and pale purple, with a yellow crest, in colour. It should always be grown in a cool house, and be given plenty of water whilst growth is active.—W. D.

Phalænopsis Harriettæ.

PERHAPS less progress has been made in the hybridising of *Phalænopses* than with any other of the more popular genera of Orchids. *Phalænopses*, of course, are very exacting in their cultural needs; nevertheless, a number of natural and artificial hybrids have at times been described and recognised, and among the latter is included *P. Harriettæ*. This is a sweet little Orchid with plain green leaves resembling the male parent, which was *P. violacea*. The seed-bearer was *P. grandiflora*. The first flowers appeared in 1887 from seeds sown in 1882. The flower is nearly 3 inches in diameter; the petals nearly three-quarters of an inch across, ovate, pale creamy white stained with purple at the base, the sepals being similar in size, but rather more acute in form, as seen in the illustration on the opposite page. This hybrid was raised at Chelsea, and named in honour of the daughter of Hon. Erastus Corning of Albany, New York, one of the best known American orchidists.

Balancing the Growth of Peach Trees.

GRAPE growing under glass is undoubtedly the most popular form of indoor fruit growing among gardeners generally, but next to it in importance is that of Peach and Nectarine culture. Notwithstanding all that has been written upon the latter subject, evidences abound which show clearly that there are still some cultivators who have not yet mastered the details of shoot and branch manipulation. As a rule the old system of shortening back the leading shoots severely in winter is not practised, for it has proved too slow a method of covering wall space in these days of hurry. Under that system it was usually necessary to root-prune young trees severely to check the strong shoots produced, and although trees formed on such principles in time covered walls with evenly balanced wood, there was too much waste of material in the process. The express

system then came into vogue, and many able cultivators demonstrated how a wall could be covered with fruitful wood—and fruit, too—in a quarter of the time it formerly took.

Such satisfactory results soon had the effect of causing others to adopt similar practices, but when carried out by unskilful hands the system has not been always voted a success. True, in nearly all instances it resulted in good crops a few years after the trees were planted, but a weak point soon became evident—viz, bare branches in the centre of such trees too often met the eye. Such a condition of affairs, however, ought never to be attributed to the system, but to the imperfect way in which it is carried out. One of the greatest difficulties the Peach grower has with young trees, is to secure well-balanced growth. A few strong shoots will always take the lead, and if nothing is done to direct their surplus vigour into other channels they will cause shoots on other parts of the trees to become weak.

Under the old system of shortening such shoots at the winter pruning, and pruning the roots as well, matters were in time put right, but there was too much waste of time and material in doing so. On the other hand, when the opposite course was pursued, and the strong shoots left unshortened, they often failed to break well at the base, and gaps were then sure to occur.

All the above difficulties may,

however, be overcome by a judicious system of disbudding and summer pinching.

From the present time onward throughout the summer a good deal of this kind of work will need attention in gardens throughout the land, so I propose to deal with the subject in detail. A start should be made at disbudding as soon as the fruit is set by removing what are known as "foreright" shoots—i.e., those which grow from the front of the branches instead of the side; also remove others at points where they are much crowded. Go over the very strong branches first and the upper parts of the trees, and a week or ten days after slightly disbud the remaining portions of the trees, with the exception of any very weak shoots. I have often found it an excellent plan to leave these untouched until the work has been completed on other parts of the trees. The extra growth left on the weak shoots will help to increase their vigour by drawing the sap with greater force in such directions. At the second disbudding the work may be performed in a more thorough manner; leave one growth at the extremity of each shoot, another at the base to form next year's fruiting wood, and evenly distributed all over the tree leave a few extra growths. In the case of young trees which have not yet covered their allotted space it is of course necessary to reserve a greater number of growths near the extremity of the branches, to supply enough shoots to cover the wall evenly as the tree extends.



ODONTOGLOSSUM EDWARDI.

To secure well-shaped trees a good deal of judgment is necessary in selecting well-placed growths for ultimate retention, for unless they form a suitable angle with the main branches they cross other shoots as they extend. For this reason the majority of the growths selected should spring from the upper side of the old shoot, though there are many exceptions to this rule, and it is better to train-in what may be termed a "misplaced" shoot than to allow blank spaces to occur. After the second severe disbudding has been performed the final selection may be left till tying-in begins; then, if some are pinched back closely, they will form spurs at points where there is too little room for a shoot, and yet space enough for a close spur, from which in after years a shoot may be taken to replace enfeebled branches.

Now I come to what I consider to be the critical period in the progress of a young tree, during which stage it may be completely moulded to the cultivator's will, provided he uses his powers of observation and acts intelligently. During the growing season a few

Wild Flowers of Old English Gardens.—V.

FROM Christmas, indeed before that arrives, right on into the spring, there is a constant demand for the Lily of the Valley, and its flowers are raised by the gardeners under glass, since, in our climate, the plant seldom blooms in the borders till May. It grows fairly well near London, especially on the Surrey side below the hills, and a clump of it will flower year after year, with little attention, but gets impoverished at last. Possibly, when the berries are allowed to form, some of the seeds dropping into the soil produce new plants. For culture indoors it is usual to obtain fresh supplies of tubers every season from the Continent. One writer, referring to London gardens, mentions having seen the Lily of the Valley growing upon the top of low walls and sheds, but I have never observed it in such situations. In the eighteenth century, Londoners had managed,



PHALÆOPSIS HARRIETTÆ.

very strong shoots will usually make wonderful headway at the expense of the weaker ones. To check this tendency some cultivators train-in the outgrowing laterals, and to some extent it has the desired effect, but far better results may be obtained by stopping. When such strong shoots have grown a foot or 15 inches in length remove the points, they will then send out a number of strong laterals. If from three to six of these are selected and trained-in, they will grow but moderately strongly, because the sap is diverted into a greater number of channels, and by stopping thus early in the season the wood has time to become thoroughly ripened.

In addition to the very strong shoots there are generally a number of others, much more vigorous than the majority. If these are stopped a little later, additional vigour will for a time be forced into the weaker shoots, and after a year or two of such treatment well balanced growths may be secured all over the tree. Indeed, so much may be done to equalise the growth of Peach and Nectarine trees by summer pinching, that I often wonder why more attention is not paid to such work. I have at various times managed a great many vigorous trees on the lines above indicated, and I have never yet had to resort to root-pruning to bring them into a fruitful condition. When, however, hard pruning is practised in winter, root-pruning becomes an absolute necessity in dealing with vigorous young trees.—H. D.

not without difficulty, to produce double flowers and a purple variety. Plants seem to have been got chiefly from damp spots in Epping Forest and heaths around Croydon. I have not found a record of its occurring in that forest since 1873. At St. Leonard's Forest, Sussex, Mr. Dyer found a legend that the worthy saint fought three days in that forest with a "fire drake," or dangerous serpent. He was victorious, but received wounds, from the blood of which, so it is said, sprung up a profusion of Lilies of the Valley. In Germany a preparation from the plant is believed to be an effectual remedy for headache, possibly on the *similia similibus* principle, as the odour of the flowers gives some people headache.

Now I come to a curious circumstance connected with this plant. There is near Dartford, Kent, a wood, formerly very extensive, called Darenth Wood, in which the Lily of the Valley, towards the middle of the wood, occupies a space of over an acre, growing thickly for the most part, but some plants are scattered in various directions. A friend visited the spot at the flowering season some years ago, and examined hundreds without discovering a trace of a flower stalk. The next year he went again, and had the same experience. On pulling up some of the plants he found about the roots and crowns a small insect—rather numerous; not a mite, but larger and blackish—resembling an aphid, though he fancied it did not belong to that

tribe, having rather the look of a tiny beetle. No plant he examined was free from them, and this might have to do with the lack of flowers; also they had then, owing to the growth of trees, not much light or air. Under cultivation this, as are other Lilies, is occasionally troubled with mites, and is liable to visits from wandering aphides; but I have never heard of any beetle enemy.

One of our botanists says that sometimes a country stroller mistakes for the Lily of the Valley a very different plant, the broad-leaved Garlic (*Allium ursinum*), deceived by the stalk of white flowers and broad pointed leaves. A brief application of the nose to the plant soon reveals the mistake. It occurs in woods, flowering in May like the other, also amongst grass, becoming a nuisance, because it flavours the milk of cows that eat it; by sheep it is usually shunned. No one can tell why the species received its bearish name, and that of "ramson," which is old, remains of doubtful meaning. This we know, that before our ancestors had the garden Garlic from France or Italy, they grew the above species sometimes, because it was esteemed as a relish with meat or bread; they boiled the leaves first, though.

The Lily and the Rose are supposed to be rivals in the matter of folk-lore, and certainly the Daffodil has had more notice than most flowers from poets of all ages. It is popularly the Lent Lily, blooming in March or even earlier, coming "before the swallow dares," and in moist localities occasionally covering whole fields with its golden flowers. Daffo-down-dilly is a familiar name for it in some counties. This, like the shorter Daffodil, is presumed to be a perversion of *Asphodel*, given to the plant by the Greeks (not the only species so named), and implying some suspicion, as does that of *Narcissus*, applied to the genus; for it was believed that the smell of some species at least, being narcotic, caused headache and faintness. Though styled a Lily, our Daffodil is considered to be a *Narcissus*, and distinguished from most others by having the stamens divided into two sets. Besides that difference, the cylindrical cup is longer than the funnel-shaped tube. It is supposed that while growing wild it is fertilised by pollen borne from flower to flower on the wings or bodies of insects. Again, as Chalice Flower, this species ranked among sacred plants, the centre resembling the cup or chalice used for sacramental wine.

We should not expect to gather wild Daffodils now about London; but the plants were formerly common in Surrey and Kentish suburbs. It was likely to be removed into gardens, but its disappearance is chiefly explained by the growth of the metropolis. Miller took it in hand at the Chelsea Physic Garden, though before his time several varieties had been obtained. He sowed the seeds of *Narcissus Pseudo-Narcissus* early in August, and screened the pans of sandy earth from the sun till October. They were then exposed to the light, but guarded from frost till April; the young plants were next shifted to other pans. After two years they were removed to beds, slightly manured, again removed, and in the fifth year considered to be full grown bulbs. One of his remarks is that a *Narcissus* must not be judged by its first flowering, since it will often improve afterwards. Amongst the favourite old varieties of the Daffodil was one with three or four cups, a single with yellow petals and a reddish cup, also a double having white petals and a yellow cup. The old gardeners insisted that a good Daffodil or *Narcissus* should have a strong erect stem, a regularly formed flower, and distinct colours. If Herrick was right in his statement, that when a Daffodil bowed its head towards you this was a sign of ill luck, or might even portend death, the first quality is important.

It is not needful to refer here to the many varieties of *Narcissus* which can be traced to foreign parentage, but two more British species may be named, which have had an occasional place in gardens for a good while. Both are rare as wild plants, probably have never been abundant; they nearly resemble each other. Bulbs of the Poet's *Narcissus* (*N. poeticus*) were, it is very likely, brought over from South Europe centuries ago, yet it was to be found about our island, and may be still, though not near London. Nor do I think a search for it would now be hopeful "in a warren between Shorne and Gravesend." Its beauty and perfume were attractive, and it had much of legend and romance belonging to its history. The goddesses of Olympus took the *Narcissus* flowers to form wreaths for his hair, and the classic poets sung its praises, but I suspect it is doubtful whether the *Narcissus* of the Greeks was the one that we admire. A handsome double variety was known in gardens early in the reign of George III. Then the two-flowered species, or *N. biflorus*, was then frequently to be seen about London, but seldom produced double flowers. Hornsey, Middlesex, was one of its wild localities, its scent being the less agreeable of the two, one of the old names being *Primrose Peerless*.

Passing to an order of plants, some in which have been already noticed, I remark that a few weeks hence we shall be looking along our Kentish hedgerows for a species which is a notable harbinger of spring. The *Stitchwort* would not be an unsightly plant in a garden border. It seems to have been cultivated, for Loudon remarks it is a species of easy growth on sandy soil. Unfortunately the white

brilliant flowers do not last long, and the stem of *Stellaria Holostea*, though it has a woody elastic structure, is curiously brittle. It was accounted a token of good luck to get blossoms of it at Easter, but in Devonshire they call it the "pixy flower," and children used to be afraid to gather the *Stitchwort* lest the fairies should take them away. Uninvited, the common *Chickweed*, which is also a *Stitchwort*, appears in gardens, flowering nearly all the year. Our forefathers utilised it by cooking it when vegetables were scarce.

When we come to the Campions and the Catchflies, also of the *Caryophyllaceae* order, we have several native species, long familiar as garden plants. Considered as insect-killers, the Catchflies are far less deadly than some species of other families, which not only kill but digest their captures. Common about London and almost everywhere is the Bladder Catchfly, *Silene inflata*, with a puffed, ribbed calyx and sea-green leaves, having the smell of Sweet Peas. They are stated to taste like the Pea, and in some countries have been eaten while young. One of the Georgian gardeners, Bryant, recommends the cultivation of the Bladder Campion or Catchfly in kitchen gardens. It may be noted that these plants ensnare insects, not by any traps, but by the stickiness of the leaves or stems. From Kentish hills and other places people brought into gardens the somewhat rare annual, the Variegated Catchfly, bearing also the singular name of *S. quinque vulnera*. It is a dark green, densely hairy plant, and the petals are crimson and white.

Two of the showy species of *Lychnis* were so plentiful near London that they were likely to be transplanted and become familiar garden plants. They still occur along meadows and hedgerows near the Thames. One of these is *L. Flo-Cuculi*, or Ragged Robin, a tallish plant with flaccid petals; the Latin links it to the cuckoo, but it is seldom in bloom when that bird arrives. Its scarlet flowers offer a fascination to some of the large moths. Sufficient stickiness exists about the joints to rank it amongst the Catchflies. A double variety has been produced, but it is of dwarf habit. The Red Campion, *L. dioica*, developed a double form which gardeners called Bachelor's Buttons; and the White Campion, *L. vespertina*, perhaps a variety, is common in village gardens. After dusk it is fragrant.—J. R. S. C.

Javanese Rhododendrons.

THE two following paragraphs conclude the article by Mr. F. S. Sillitoe printed in the Spring number, March 14th:—

The *Balsaminæ* section contains only five varieties, all double, and from their resemblance to the double garden Balsam their name is derived. They must not be confused with the hardy *R. indicum balsaminæ* section.

Representing as it does the only true double flowers in the *Rhododendron* family, it is interesting to know how it originated. A semi-double flower on a Jav.-jas. hybrid was noticed and fertilised with pollen from stamens that had not become altogether petaloid. From this seed-capsule fifteen seeds were produced. These germinated and were grown on, and in five to seven years they bloomed, all having more or less double flowers. The most wonderful fact, however, was that no two were alike, and the five varieties album, roseum, carneum, aureum, and Royali. The last differs from the others in not being a "self." All these were considered worthy of cultivation, and when shown at the Royal Horticultural Society's meetings all received first-class certificates. This shows that fertilising with their own pollen tends to fix the form, but with pollen from a single flower a single bloom is produced. A semi-double flower was noticed on *R. Princess Alexandra*. This was fertilised and produced seeds, but as the plants only produced a few double flowers it was discarded.

Multicolor hybrids are the results of crossing Jav.-jas. hybrids with the true *R. multicolor* (lennon flowers) and *R. Curtisi*, with dark red from Sumatra. They are quite distinct from any of the Javanese section, having smaller flowers and more slender in their growth. The flowers are produced in lax corymbs, and are all colours, from white to dark red, and some of two distinct colours. The finest variety in this section is Mrs. Heal, a pure white, obtained from multicolor (yellow) and Princess Beatrice. These are the most floriferous of all the warm section. Other good varieties are Ruby (deep red), Rosy Morn (pink), and Nestor (buff rose). One hopes to see these beautiful shrubs become more popular, as they certainly deserve to be, and there is yet a large field open to the hybridist. We want freer flowering varieties, and to introduce the *Teysmanni* colour into the Himalayan section. With the opening up of the great Empire of China discoveries of great value to the horticulturist may be expected. Dr. Henry, Abbé Delavey, and a few others have as yet been the first pioneers into the country which has given us *Primula sinensis*, the *Chrysanthemum*, and many Roses and shrubs; while at the present time Mr. Wilson, an old Kewite, is exploring unknown regions of that Empire, which is supposed to contain many more beautiful *Rhododendrons* hitherto only seen here as dried specimens.—F. S. SILLITOE.



An Embankment Idyll.

THE writer of the above paragraph in last week's issue of the Journal (page 223) is evidently more of a poet than ornithologist. The pigeons described are the common wood pigeon, which is now nesting freely in all the London parks. A blue rock nesting on the embankment would be a curiosity, as its nesting place is usually a cave on the seashore, and it is not very common except on the wilder and more inaccessible parts of the coast. As the blue rock is the ancestor of the domesticated pigeon, it is of course just possible that the pair referred to are reversions from the semi-wild birds which breed about London to something like the ancestral type, but the choice of breeding spot is very much against this supposition.—CHAS. E. PEARSON, *Lowdham, Notts.*

The Great Moth.

I READ with interest the remarks of your correspondent, "Entomologist," page 190, on the death's-head moth. I think the following might interest him and others. Last August I found a very large and beautifully marked caterpillar of this peculiarly interesting moth on a newly planted Asparagus bed. I placed it in a glass jar, and kept it in the kitchen on the window-sill, and fed it daily on small Lettuce leaves, of which it ate freely. The rapidity with which the Lettuce leaves disappeared was surprising, for it devoured them at night as well as by day. This proves clearly that it devours more or less other kinds of vegetation besides Potatoes. When I handled the glass jar, and also whilst feeding, it made a peculiar squeaking sound, which I cannot well describe. I kept it indoors about ten days, and at the end of that time it plainly showed the ill effects of confinement, for it emitted no sound, and appeared almost lifeless. Then I put it outside on a flower border close to the back entrance, where it soon revived, but after the third day it vanished. One morning, about two months afterwards, I was fortunate enough to find near this spot a fully developed moth, which apparently had only just emerged from its shell-like covering, and from its chrysalis state, for part of the shell was attached slightly to the moth. So it evidently appears that the caterpillar must have burrowed in the earth, and passed from the caterpillar to the chrysalis, and thence into the moth. I found the latter when it emerged from the earth only a couple of feet from where I placed it in the caterpillar stage. It appeared too weak to fly, though it tried hard to do so by constantly flapping its wings and making a very similar, though louder, sound than when a caterpillar. I presented it to a medical gentleman who is interested in entomology, and he regarded it as a very fine specimen of *Acherontia atropos*.—A. J., *Moor Hall.*

The Late Mr. John J. Alliston.

WHEN the postman brings the Journal my eyes instinctively go to "Notes and Notices." I have just read them for this week (page 193). The one that interested me most was Mr. Gregory's note on the death of the above-named—I was going to say gentleman, but will put excellent practical gardener. Were he in the flesh I know the latter term would be the most satisfactory to him. I first met John Alliston in 1866, he was then gardener at Laverstoke House, near Micheldever, in Hants. The writer was in the same position at Hackwood Park, Basingstoke, in the same county. Until 1872, when I left to come here, our friendship was a close one. For a good many years I have heard nothing of him direct, but have never failed to look up the Horticultural Directory to see if his name was on the roll call. He was one of the very best practical gardeners I have ever met. Besides being an adept at the use of any gardening tool he could give the reason why he did every gardening duty. While in no sense a shy man he never courted publicity in any sense of the term. The produce-supplying gardens at Laverstoke were very beautifully situated, though not very extensive; considering the nature of the soil—a very poor thin one overlying the chalk formation—it was surprising the amount of good fruit and vegetables that were produced. I should not like to say how many hours a day he worked in the very dry season of 1870 to gain his object. One of our pleasant annual outings was to visit Strathfieldsaye and Heckfield generally in September. One well-known gardener is still living who more than once joined the party, viz., Mr. Kneller of Malshanger. Mr. Bell of Strathfieldsaye and Mr. Wildsmith of Heckfield have since gone to their rest. Both in their varying capacities were good men and true. On New Year's day, 1870, there was a meeting of local gardeners at an inn near Oakley Station in Hants for the discussion of gardening matters. Some twelve or fourteen were present at the invitation of the writer. This was continued for

the two following years. Mr. Alliston was the life and soul of these meetings. Gardeners' meetings of this sort were then rare, and it may be of interest to mention that the distance apart of some present was nearly twenty miles. Several walked for some miles. No "hikes" in those days for gardeners. Whenever the gardening press came up for discussion, without underrating any other paper, Mr. Alliston was always staunch in holding up the "Journal" as his ideal paper. I could go on much longer on this topic, but knowing your wisdom in exercising true editorial discretion for your valuable space, will refrain. Peace to John J. Alliston's memory.—HENRY J. CLAYTON, *Grimston Gardens, Tadcaster.*

A Good Bunch of Bananas.

A CORRESPONDENT writes:—The enclosed is a Banana grown in my garden. Will you kindly give me your opinion about it? I cannot find any so large in the fruiterers' shops about here. The bunch weighs 57 lbs. I cannot count the number of fruits nearer than 160. The enclosed is not one of the largest fruits.—J. J.

[The fruits sent by our subscriber tasted remarkably well, having a rich, mellow flavour; and his bunch certainly shows good culture. Many larger bunches of fruit, however, are known, and we would refer "J. J." to the "Impney" bunch, which, so far as we know, is a record one, whose weight was 114 lbs. (exactly double the weight of "J. J.'s") and contained 283 "fingers." See *Journal of Horticulture* for May 26th 1898, where an illustration of the "Impney" bunch is given.—ED.]

Grape Madresfield Court.

As "W. S." truly remarks, on page 188, this fine Grape is usually adjudged to be a fickle one. It is a Grape that wants watching, but there can be no doubt on the other hand that many people in their anxiety to prevent cracking have really hastened it by their methods. For instance, keeping the border dry is, as "W. S." remarks, often recommended, but some of the grandest Madresfields I have ever seen were grown in a vinery where the hose is allowed to run almost continuously for days upon the borders at the finishing stage. The young Vines rooting freely in a newly made border, and carrying a moderate crop of large bunches, I have watered most freely time after time, as well as applying manure water regularly, yet not a cracked berry could be seen. As a matter of fact I have, from continued trials, come to the conclusion that anything which tends to the lowering of the vitality of the Vine, as drying the border does, will eventually be followed by cracking. The skin of the berry must be kept well supplied with moisture, as well as the other portions of the fruit and plant; it will then remain more elastic until the ripening process is well advanced. I am convinced, too, that a dry atmosphere in the house is far more harm than good, and though not advising anything like the amount of moisture in the air that the Grapes receive when swelling, should never advise a parched state. A very slight acquaintance with the principles of osmosis will show that extremes either way are best avoided. But I have great faith in allowing as much freedom as possible to the laterals during the time the berries are taking their last swelling, and while colouring. It is absurd to think that because the energies of the Vines are used in forming the laterals that therefore the berries must suffer. There is enough for both in healthy Vines. Keep up the vitality of the Vines, then, and avoid all sudden changes either of temperature or atmospheric conditions, and cracking of this fine Grape will be reduced to a minimum; but let a rush of dry air come suddenly upon a bunch with berries filled to repletion with fluid, and very few sound berries will remain.—H. RICHARDS.

A Strawberry Support.

SEEING yet another invention for supporting plants and Strawberries described in the Journal (page 227), I am led to mention that I have been investigating this matter lately. To discover or invent a support of some sort, which will raise the fruit off the ground and into the sunshine, is quite necessary for the perpetual Strawberries, especially in the autumn months. All the patents and devices that I have seen are to my mind, as usual, much too elaborate and expensive. I fancied I could "conjure something" (a Suffolk expression, which implies a makeshift invention) at 6d. a dozen, which would thoroughly answer the purpose, and as I should require several hundreds, this would suit me a good deal better than anything at 1s. 6d. or 3s. a dozen. I have accordingly tested the following, and believe it will answer capitally. Take from 3 to 4 feet of galvanised iron wire (No. 10 size, at about 3 yards a penny), and at each end bend down at right angles a piece 8 to 10 inches long. And that is all! To use, simply bring round the uprights to meet, nearly meet, or pass each other, thus forming a ring, larger or smaller as may be required. Stick the two ends in the ground, and there you are, at 4d. a dozen for material, and I think you would not be doing badly at 2d. a dozen for cutting and bending. If any difficulty is found in bringing the two uprights together, owing to the stiffness of the wire, a great many may be made into good rings in a few minutes by bending them round a large post. Get wire of the size and stiffness that it will bend, but not too easily. The support

will not need to return into the straight line again, but will easily bend back to a half circle. I may add that I have no intention of patenting, selling, or even buying them; but shall simply buy the wire and make them.—R. R. RAILLEM.

Grape Gros Colman.

At page 188 "W. S." strikes a sympathetic note when remarking on the fickleness of the above named Grape on some soils. With the exception of the two standard Grapes—viz., Black Hamburgh and Muscat of Alexandria—perhaps no other variety is more generally planted than Gros Colman. When properly finished it is a truly grand Grape, but when not so—well, quite the opposite. My experience and observation show that the best fruit is produced by Vines growing in an alluvial sandy loam. One particular vinery I know of in such a position has given an immense amount of good fruit annually for many years. As the house in question is somewhat original in its construction, perhaps a fairly short description may be worth printing. The site was a small close of grass land of an alluvial nature, situate not very far from a Yorkshire river. During winter floods the subsoil up to within 2 feet of the surface is saturated. It was decided to utilise

time, but never saw any more so than in the house in question. Gros Colman occupied fully two-thirds of the space after the first few years.

I am not wishing to infer that it would be wise for anyone intending to erect a vinery to copy in detail the above method of construction. All the same, it answered its purpose well for many years, though the last time I saw it it was getting very rickety. The builder, who has since died, said the only drawback from a cultural standpoint was the difficulty in getting to thin the bunches on the lower part of the Vines. I have seen holes dug in the border for them to hang in, and standing at the end it was like looking down a tunnel of Grapes.—H. J. C.

Pergolas.

In nearly all gardens the addition of pergolas would form a very welcome feature. When strongly built with bricks or stones a handsome, substantial appearance at once reflects from them, whereas too often a poor effect and consequent bad impression is derived from the flimsy Spruce-branch structures which are frequently designated with



VIEW OF A PERGOLA.

the field for fruit growing, under glass and outside. The leaseholder was a gardener intending to make a living thereby. Cash not being plentiful, he set his wits to work to make what he had go as far as possible, so he decided to be his own architect and builder. This was twenty-seven years ago; before the era of acres of glass erections for similar purposes. After measuring out the site for his vinery, which was about 100 feet in length by 18 feet in width, he gave the ground a dressing of half-rotten horse manure, and double dug it, keeping the manure mostly betwixt the top and bottom layers of soil. I ought to mention the dumping and digging was carried out for double the width of the intended vinery space, so as to prepare an outside border on each side 9 feet in width. Down the centre of the space a 4 feet path was dug out a good spade depth, the soil being equally spread on each side. A few rows of old bricks were then laid on each side of the path to keep up the soil. No mortar was used to bind them, only some adhesive clay. A line was then strung on either side of the space to be covered, and some stout well charred piles driven in to a depth of nearly 3 feet. Of course care was taken to have the tops of them of one height, though an allowance of an inch or two was given in the fall to carry off the rain water from spouting. On the top of each row of piles a stout pan was fixed by strong nails. To the pans was then nailed a bevelled piece of timber for the astragals that form the roof to be fixed to. The ridge piece was then erected and the roof fixed, provision being made for small ventilators on each side of the ridge. The ends of the house point north and south, the pitch of the roof being at an angle of about 45°, hence the height of the ridge is equal to half the width of the space covered. The only brickwork was a low wall at the south end, and the whole of the angle at the end pointing north. I have seen many heavy crops of good Grapes in my

the euphonious title "pergola." Many an exposed, sunless walk could be pleasantly awned over were such erections as our illustration portrays included as a feature of garden design. The illustration, however, only shows how a newly finished pergola appears. By fixing beams overhead at right angles to, and resting upon the horizontal beams between the piers, one would have a support for climbing plants whose growth would in time entwine and spread over the entire structure; and anyone who has enjoyed the beautiful sight of a properly disposed and well-clothed pergola, can appreciate the value of their addition to the pleasure grounds or garden.

Regarding the making of these structures the author of "Wood and Garden" recommends that the piers should stand in pairs across the path, with 8 feet space between them. Ten feet from pier to pier along the path is a good proportion, or anything from 8 to 10 feet, and they should stand 7 feet 2 inches out of the ground. Each pair should be tied across the top with a strong beam of Oak, either of the natural shape or roughly adzed on the four faces; but in any case the ends of the beams, where they rest on the top of the piers, should be adzed flat to give them a firm seat. If the beams are slightly curved or cambered, as most trunks of Oaks are, so much the better, but they must always be placed camber side up. The pieces that run along the top, with the length of the path, may be of any branching tops of Oak, or of Larch poles. These can be easily replaced as they decay. The piers are either round or square, coated with plaster, if this is thought desirable, and painted a stone colour. Vines, Jasmines, Aristolochia, Virginia Creeper, and Wistaria are the best subjects for planting, though Roses and many other plants can be employed.—H.

The Auricula.

It is stated by some observers, that when some of our migratory birds are kept in confinement, when the period of migration approaches they become restless, and however contentedly they may have lived in their cages, they begin to ruffle their feathers and stretch themselves as if preparing for flight. They think of the home they have had in distant lands, and make vain efforts to reach it. And so it happens that when I reach the season when my Auricula plants used to begin to move, I, too, become restless, and as I look upon the pit where my plants were carefully housed, and think how busy I used to be with them in these early spring months, a longing comes over me to be once more engaged in the pleasant task of preparing them for their

Mr. Headley, of Stapleford, near Cambridge, was another of the raisers of old times. He has left behind him one which I suppose will always remain in the very forefront of all Auriculas. He named it after his friend George Lightbody, and Headley's George Lightbody will be allotted the first place by all Auricula growers. He raised others, such as Stapleford Hero; but they have all passed into oblivion. Coming down to more recent times, we have in the North such men as the Rev. F. D. Horner and Ben Simonite, who have been hard at work for years, and whose gains (few in number) have found their way into our lists.

The Show Auricula, as is well known, is divided into four classes—viz., green edged, grey and white edged, and selfs, and when anyone saves seed and raises seedlings the greater portion of them are sure to be selfs. The most highly prized are the green edged varieties, the



AURICULAS : 1, MRS. HENWOOD, GREEN EDGE ; 2, MIDNIGHT, SELF ; 3, DEAN HOLE, ALPINE.

summer growth and expansion. But it cannot be. They have all passed out of my possession, and I can only live upon the memories of the past. How pleasant those memories are, and what great enjoyment I used to derive from my small collection! I am afraid that it is only amongst a small band of zealots the plant will ever be popular. Its flowers are too formal, its properties too rigidly laid down, ever to suit the taste of those who can only see beauty in those plants which can lend themselves to the decoration of our houses or to the adornment of our persons. Thus the Auricula fares badly in the modern growth of æstheticism. You cannot even make a button-hole of one of its trusses, and it is hopelessly out of place in any arrangement for our rooms.

It is, however, a flower which has many advantages to those who cultivate it. The varieties are not many, nor are they likely, as far as one can see, to be largely increased in number. Mr. Lightbody, of Falkirk, was for a long number of years engaged in raising seedlings, but he only left three or four varieties to perpetuate his name.

grey and white edged merge into one another; there are some distinctly white edged sorts, such as Reed's Acme and Taylor's Glory, while there are others which are sometimes white and sometimes grey. The ambition of most raisers is to obtain some striking green edged variety. One disadvantage in growing the Auricula is that you cannot propagate it in accordance with your wishes. You must leave it to itself. The offsets are produced in some varieties very sparingly, in others more freely; thus such kinds as Traill's Beauty, and some of the selfs, such as Black Bess, will give you several offsets each year; there are others which for years will not give you one. How tantalising this is may well be imagined. You have a fine healthy plant, let us say, of Prince of Greens, and you look in vain year after year for the production of some offset; but it will not come, and you have to put up with disappointment.

I have been told, indeed, that if you were to cut off the head, and leave the plant in a close frame, you would be rewarded with a crop of offsets; but it requires Spartan courage to do this, and I have never

practised it. There are some kinds, however, which are exceedingly prolific in producing offsets, but unhappily most of them are not of first-rate quality. Traill's Beauty is very free in this respect, and so is Turner's Col. Champneys. This last in many respects does not come up to a florist's notion of a good Auricula, but it has a most lovely body colour—a beautiful dark violet one hardly knows how to describe, but it is a colour, so far as I know, not met with in any other flower.

But it may be asked, What do you mean by "body colour?" Well, the pip of the Auricula, as the single flower is called, is arranged in colours arranged in circles. There is the edge, either green, grey, or white; the body colour, which is dark violet or plum colour; the paste, which is pure white; and the eye, which ought to be bright yellow or orange. In the first-rate Auricula these parts ought to be equal, and should not run into one another; thus the edge ought not to be mixed up with the body colour, nor the body colour run into the paste. These regulations may seem to be very artificial, and so in truth they are; but Mr. George Leney many years ago framed these regulations, and anyone, I think, who saw a flower possessed of these properties placed alongside of another in which they did not exist correctly, would not lose a moment in pronouncing on the superiority of the former.

Of late years a good deal has been said about the beauty of the border varieties, as they have been called. Their colouring is of the most bizarre character; they are bound by no rules, and are evidently the same in character as those which appear in the prints of the old Dutch flower painters; and so, when people have sometimes said to me, How beautiful your Auriculas are! you find on inquiry they mean not the Show, but the Fancy varieties.

I have said nothing about a class which has come into great favour of late years, I mean the Alpine Auricula (see page 241). It is of hardier constitution than the Show varieties, and indeed may be grown successfully out of doors. The substance of the flowers is firmer than that of the Show varieties, but their range of colour is not so varied. They produce seed freely, and hence their varieties have of late years considerably increased in number. It is unwise for anyone who wishes to raise seed from the Show varieties to place any plants of Alpines in their frame, for they will be sure to make their mark felt where it is not wanted. The variety Dean Hole, raised by Mr. James Douglas, is brilliant gold and crimson.

What, then, it may be asked, are the varieties that most meet the requirements of the florist? I should place at the head of the list green edged varieties—Prince of Greens, raised by Traill of Scotland. This, like most Auriculas, is not perfect, the tube being weak, for it is very pale, a fact which detracts greatly from the bright appearance the flower would otherwise have; then would come Simonite's Rev. F. D. Horner, Douglas's Abbé Liszt, and Marmion. Lee's Colonel Taylor I remember to have seen catalogued as a £3 plant, but I question very much whether it be procurable now. Mrs. Henwood (see page 241), raised by Simonite, I believe, named after the wife of the energetic secretary of the National Auricula Society (southern section). It is one of the newest additions, and is a first-rate flower of good constitution, and has a very bright green edge.

Then amongst grey edges we have that grand flower George Lightbody; Douglas's Conservative, Woodhead's Rachel, Mrs. Dowdell, Variable, whose edge is sometimes white and sometimes grey; and Alexander Meiklejohn, which I have seen at times very good indeed. In the white edges Read's Acme and Taylor's Glory are good and well-defined flowers. It is difficult to get a good truss of the former, and a plant is apt to break up into offsets. In selfs we have Woodhead's Black Bess and Mrs. Potts, Horner's Heroine, Lord of Lorne, Campbell's Pizarro, and the deep maroon Midnight (see page 241).—D., Deal.

Early Potatoes.

MUCH has been written, and well written too, as the past volumes of our Journal amply show, on Potato growing, both as to early and main crops. That writing has been done from so many and varied standpoints and conditions that it may be said to cover every possible phase in the production of our national and indispensable esculent. As, however, new readers are being added weekly, and as these readers (at least, the generality of them) cannot by any means get easy access to past numbers and volumes, it becomes necessary, so as to satisfy all demands, to go over again the old ground, and state or restate the lessons which every Potato grower learns year by year for himself, and which he is, like every true gardener, anxious to give to his neighbour, and particularly to any young neighbour who is striving to do his best in the situation he finds himself placed in. Let me here say that these remarks are from the standpoint of a gardener who is catering for an establishment in the middle grade of society, and who has

therefore to adopt many expedients which the gardener in the higher grade of society would smile at and look down upon. Even in these middle grade places, each one has its own special conditions and requirements, the differentiation of each being in many cases wide of the other, and the gardener has to study the particular needs and demands made upon him, to prepare his plans and carry them out to suit those needs and demands to his own case, quite irrespective of what his immediate neighbour may be planning and doing; and though he may, and often does, compare notes and discuss plans with his neighbour, he has to evolve out of his own individual powers, his skill and judgment, just those plans and those operations which he knows or feels will give him the required results. There is no cast-iron law in gardening, and least of all is there any fixed immutable law as to the growing of Potatoes in detail, though the general principles of their cultivation are understood and carried out by everyone who grows them successfully. Those principles may as well be once more concisely summarised, as it is soon done. Here they are.

Well dug land, double dug when possible, autumn manured by preference; timely planting of good seed, properly kept and prepared, and occasionally changed, in rows of good width, say 3 feet apart and 18 inches in the row ("Nothing pays like plenty of room wif 'taties," said an old Yorkshireman to me very early in my gardening career, and I have often proved the wisdom of his saying); keeping them clean, and earthing up judiciously at the right time. These are the main points in Potato cultivation. We then have to consider the question of varieties, and it is here where every gardener, though he may receive many valuable hints as to this variety and that being better than some other, he has to prove for himself by practical experience from the really wonderfully numerous, varied, and high-class sorts that are in cultivation, which kinds will suit him in all particulars for every demand made by the kitchen people as to Potatoes all through the season. In one's young days, when we are eager to know everything, and very impetuous in carrying out one's ideas, we occasionally make mistakes, and notably so in trusting too credulously to all that is told us by people who, though well meaning enough, are a little too enthusiastic at times in their descriptions of the things they have to dispose of. Addressing myself, then, to would-be Potato growers, and especially the younger ones, I would say: Prove all varieties as circumstances admit, and then stick to those which are, to you, good. I must add to this advice this special warning—never trust to a novelty for the daily supply. Have the supply always safe from known and proved varieties, and let the novelty or novelties show up their merits according to their ability. I am an old man now, and once in the days of my youth in gardening I trusted to a much advertised variety of Potato to give me my first liftings for the master's table. Ah me! My much vaunted first early variety proved to be only a very ordinary second early sort, and I was ten days to a fortnight behind time, and I never heard the last of that mistake. It was a lesson to me. And now I try new varieties every year, but only in a tentative and cautious way, and advance them into my annual positive supplies of roots or drop them altogether, as they show themselves to be worthy or unworthy.

My first variety for the earliest liftings, and only for the first, is of course Sharpe's Victor. As one might easily conclude, from the excellence of the true variety, there are Victors and Victors, and there is a very, very wide difference in the respective sorts. Once secure the true variety and then one is all right. I only grow sufficient of these to lead me up to the next, which is Sutton's Ringleader, but before I go further I must say a very good word for an early variety I tried for the first time last year, and that is Harrison's Short Top. It is a splendid grower, early, very prolific, and fine on the table. I am extending its cultivation this season. After Ringleader, which, with great prolificacy, has a refinement of colour and flavour about it commending it to its consumers to such a degree that there is less complaint of monotony and want of change of it than of any other early variety, though, recognising this desire for change in the tastes of the consumers, a desire which must be considered and provided for by every private gardener, I grow a few of Early Puritan and Harbinger.

These varieties are bountiful in production, and being of part American breed are softer-fleshed than our other drier early sorts, and are an agreeable change on the table. Then I fall back on what has been for many years past my main second early variety, the Royal Ashleaf. Some call it Myatts', some Rivers', some Veitch's. I only know that I got my seed from a noted place in the Midlands, where they grow this variety most extensively for the markets, and the growers religiously preserve their own seed year by year. Here, through the kindness of a friend, I became possessed of some, and have never lost it since. It is a splendid cropper; comes out clean, and eats firm and dry and mealy, and will eat so from time of lifting until the seed is ready to go into the ground again. To change on this, and a change from this very good one is desired occasionally, I grow Windsor Castle and Prizetaker, each excellent in its way both as to cropping and table quality, and that finishes my early Potatoes. The after supply comes from the farm, where Magnums, Stourbridge Glory, and Up-to-Date are grown in quantity; but as this is a little chat on early Potatoes I need not say anything more about them. Perhaps there may be something in this which will be of use to some other Potato grower. So mote it be.—N. H. P.

NOTES & NOTICES

Weather in London.—Almost consistently the weather has been dull and more or less cold. Gleams of sunshine have been scarce, though Thursday the 7th inst. was a very agreeable day. Tuesday, the 19th, gave a slight snow shower. Warmth is required.

Weather in the North.—The past week has been throughout dry, generally dull, and without frost. A cold easterly wind prevailed from the 15th on to Monday, and land has now got into good condition for farm work, which is being pushed forward, the Bean crop being generally in.—B. D., *S. Perthshire*.

Dr. William G. Smith.—We are pleased to learn that Dr. W. G. Smith, of the Leeds College, who so greatly assists the Scientific Committee of the Royal Horticultural Society in their decisions regarding plant pathology, expects soon to have prospects of greater work in this direction. Through his being relieved of much of the teaching at present, and having the benefit of a well-equipped laboratory, standing in an acre of experimental garden in the open country, we confidently expect that the doctor's work will still more fully help the cause of the practical cultivators of our islands.

Royal Horticultural Society.—At a general meeting of the Royal Horticultural Society held on Tuesday, March 12th, thirty-two new Fellows were elected, making a total of 200 since the beginning of the present year. Amongst the new Fellows were the Duchess of Somerset, Viscountess Baring, Sir William Preece, K.C.B., F.R.S.; Lady Hylton, Hon. H. A. Lawrence, and Surgeon-Major Caldwell, M.D. The next fruit and flower show of the society will be held on Tuesday, March 26th, in the Drill Hall, Buckingham Gate, Westminster. A lecture on "Inconspicuous and Rarely Cultivated Orchids" will be given by Mr. W. H. White, A.R.H.S., at three o'clock.

Victoria Medal of Honour in Horticulture.—The Victoria medal of honour in horticulture was established in the year 1897, with the assent of her Most Gracious Majesty the late Queen Victoria in commemoration of the Golden Jubilee of her reign, and the limit of sixty Victoria Medalists at any one time was fixed to record that event. It has now seemed good to the president and Council to issue a minute and Order of Council that the number of Victoria Medalists shall be increased to sixty-three as a record for all years to come of the sixty-three years of her late Majesty's glorious reign, and that such number should never hereafter be added to or increased. There having been one vacancy in the original number at the time of her Majesty's death, the president and Council, acting on the above minute and Order, have made the following appointments to the list of Victoria Medalists—viz., Miss Eleanor A. Ormerod, LL.D., &c.; Sir George King, K.C.E., I.M.B., F.R.H.S., Fh.S., &c.; Mr. George Norman, F.R.H.S.; and Mr Jas. Sweet, F.R.H.S.

Miss Eleanor A. Ormerod's name is known in every household, everywhere, at least, in rural places. Since 1877 Miss Ormerod has devoted her whole time to the investigation of the depredations, the life histories, and characteristics of insects, but chiefly those that are injurious to stock or to crops. When this lady began her work comparatively little was known of the counteracting, injurious insects, of the farm and garden, so that to Miss Ormerod belongs almost the entire credit of our present knowledge of these pests, and how to combat or prevent them. She inaugurated a great work and a good work, she headed the operations in this special field, and until the present year she has been in the very forefront of scientific entomological investigation. Miss Ormerod's lead has brought battalions in the wake, and her influence has certainly given a magnificent impetus to the study of this science. We learn with regret, however, that this talented and industrious lady is at last obliged to discontinue her investigations. The University of Edinburgh conferred on her the honorary degree of LL.D. a little over a year ago in recognition of her splendid services to her country; and now the Council of the Royal Horticultural Society has awarded her the Victoria Medal of Honour for what she has done for horticulture. No honour could be more richly deserved, and we are proud to be able to name Miss Ormerod among the sixty-three who enjoy this high horticultural distinction.

Death of Mrs. John Easter.—It is our sorrowful duty to record the death of Mrs. John Easter, at Nostell Priory Gardens, Wakefield, early on Wednesday morning, March 6th. Mrs. Easter has been an invalid for years. We tender our condolences to Mr. Easter in his bereavement.

Correction.—In reporting the sitting of the Narcissus Committee of the Royal Horticultural Society, in our issue of last week, it was stated that they made no awards. They made *one* award, that of a silver Flora medal, to Messrs. Barr & Sons, King Street, Covent Garden. The Messrs. Barrs' exhibit was not wholly of Narcissi, though these were more numerous than on any of the other tables.

Sir George King, V.M.H., &c.—Botany has been duly honoured by the Council of the Royal Horticultural Society in having Sir George King, late head of the Botanical Gardens at Calcutta, elected as one of the new Victoria Medallists of Honour in horticulture. If we remember rightly, Sir George interested himself in, and wrote a monograph on, the Himalayan Primulas. He has now retired from his Indian post, and is at the present moment at San Remo.

Floral Tributes to Queen Victoria.—The following official communication was issued towards the end of last week:—"His Majesty the King desires to express his sincere thanks to all those who were good enough to send floral tributes from all parts of the Empire to Osborne and Windsor in memory of his beloved mother, Queen Victoria. His Majesty has been much touched by the kind feeling that promoted these beautiful offerings, which numbered over 2000."

Appointments.—Mr. C. Hewitt, late gardener to — Shannon, Esq., Tudor Hill, Sutton Coldfield, has been engaged to take charge of the garden and Cactus houses of Wm. C. G. Ludford, Esq., F.R.H.S., Fern Lea, Four Oaks, Sutton Coldfield, near Birmingham. Mr. T. Singleton, for eight and a half years head gardener to the Marquis of Waterford, Curraghmore, Portlaw, co. Waterford, has been appointed head gardener to G. H. Morrell, Esq., M.P., Headington Hill Hall, Oxford, in succession to Mr. Hovell.

Attendants at Drill Hall Exhibitions.—In the annual report of the Royal Horticultural Society we learn that the Council have provided an official badge to be worn by the attendants of the exhibitors. So far, however, none of these have been in use. No energetic attendant worth his salt should really need a distinguishing badge. When the hall is crowded, however, many of those who are taking notes, yet who have no connection with exhibitions, are accosted by others in mistake. What may be done when the shows become larger in a week or two remains to be seen. At any rate the badge would not be an inconvenience.

A Mean Theft.—An incident which circumstances force us to describe as a mean instance of appropriation occurred at the Drill Hall on the occasion of the last R.H.S. meeting there, March 12th. Mr. de B. Crawshay writes to "The Gardeners' Chronicle" announcing that he had a spike of *Odontoglossum Pescatorei* var. *Veitchi*, which he meant to have photographed. This he carefully laid aside while he attended to other business. The variety is unique, and naturally Mr. Crawshay was more than astonished to find that his Orchid flower was not to be found when he went to take it from the place where he had placed it. A careful inquiry and search was made without any success. We say with Mr. Crawshay that "this is carrying the 'craze' for Orchids to the lowest ebb."

St. Patrick's Day and Shamrock.—St. Patrick's Day, which was on Sunday, was observed quietly and unostentatiously in London. The demand for "the dear little Shamrock" was less this year than last, though Mr. Williams of Covent Garden had the honour of supplying the King and the Royal Family with £30 worth of Ireland's emblem. Queen Alexandra had a special dinner-table decorated with it. Mr. Williams also sent out 500 bunches to the troops in South Africa. Shamrock is sent from most of the country districts, but chiefly from West Cork, around Skibbereen. "The best kind," whatever it may be, is sent from Balbriggan in Co. Louth. Last year the late Queen's Army Order was that "In future, upon St. Patrick's Day, all ranks in her Majesty's Irish regiments shall wear as a distinction a sprig of Shamrock in their head-dress to commemorate the gallantry of her Irish soldiers during the recent battles in South Africa." On Sunday last a Celtic cross of Shamrock and Lilies of the Valley was placed on Queen Victoria's tomb at Frogmore.

Kent Hop Gardens.—The rains have been the means of greatly retarding tillage operations on the Hop plantations. The ground has remained sodden now for some time, and the Hop grower anxiously awaits some nice dry weather.

Golden Wedding of a Scottish Market Gardener.—Mr. and Mrs. David Brown, Newlandrig, Gorebridge, recently celebrated their golden wedding, when a number of their friends and well-wishers took advantage of the occasion to present them with a purse of sovereigns.

A Novelty Garden of 25 acres is being established by the United States Department of Agriculture, to be filled largely with plants and seeds sent on by collectors of the Federal Government from foreign countries in all portions of the world. This garden on the Potomac Flats, near Washington, D.C., probably already contains more varieties and species of garden and farm plants than any other tract of its size in the country.

Flowers for the Hospitals.—On all week days, but especially on Sundays, a great many flower sellers are to be seen waiting at, or nearly, the entrances to the various London hospitals. At this season Narcissi are mostly offered, though Violets and Lily of the Valley are also largely sold. It is very touching and nice to see how even the poorest never pass to visit their sick relatives without purchasing some beautiful flowers.

Dahlem Botanical Garden.—An extensive botanical garden has recently been laid out at Dahlem, a village within easy distance of Berlin, which possesses some novel features. It is situated in very rough country, and unique advantage has been taken of this fact by reproducing, as far as possible, the natural scenery from which the various specimens of Flora have been collected from all parts of the world. By this means a more comprehensive idea is obtained of the native habitat of the plants and trees, and the conditions under which they thrive.

Public Meteorological Posts.—In several German and Swiss towns (says the "Globe") there are public meteorological posts; little observatories, in fact, having a thermometer, a barometer, and a hygrometer, which the inhabitants consult, especially if they are likely to travel. Among the instruments employed are some as yet unfamiliar here—for example, the polymeter, thermo-hygroscope, and weather-telegraph of Herr Lambrecht, a well-known instrument maker of Gottengen. His hygrometers with a bundle of hairs, not a single hair, are very accurate, and the "polymeter" is a combined thermometer and hygrometer, with numbers giving the dew points, and the maximum and minimum tensions of water vapour in the atmosphere, corresponding to the readings of the two instruments.

Beet in the States.—The Americans, with less than their usual celerity, have awakened to the fact that there may be money in Beet sugar, but now they have discovered it they are going ahead. According to statistics the United States consumes "a quarter of the whole sugar product of the world." We rather question the statistics if they show this, but at any rate it is evident the States can consume enough to give the Beet grower his necessary market. According to Herr F. O. Licht, the well-known sugar expert, the consumption of sugar per head of the supposed populations of the principal countries places the United Kingdom a long way ahead of any other nation. We have a consumption of 91.75 lbs. per head per annum, the United States coming next with 65.28 lbs., and Denmark third with 54.86 lbs.; while Sweden and Norway follow with 38.27 lbs., France with 37 lbs., Germany with 33.92 lbs., Holland with 32.48 lbs., Russia with 14 lbs., and Italy at the bottom of the list with 6.09 lbs.

A Standard Nomenclature.—The scientific names of plants are a great bother; unfortunately they are necessary. It is a pity that they are always changing; no lover of plants likes to pay good money for an old plant under a new name. The synonyms are endless, and the nurseryman and gardener cannot always tell which name to use. Many people blame the botanists for the present state of anarchy. The trouble is largely with the plants themselves. Botany is not an exact science, and never can be. As the knowledge of the vegetable kingdom extends, the names of plants are bound to change; the best that can be done is to follow the best authority. The best authorities for the purposes of English gardeners, says "The Florists' Exchange," are the "Index Kewensis" and Nicholson's "Dictionary of Gardening;" but for America, Professor Bailey's "Encyclopædia of American Horticulture" must now be preferred.

Beef or Jam?—According to Mr. James Boyle, United States Consul at Liverpool, the natural diet of the Englishman is now jam, and not beef. Here is good news for fruit growers!

Fossil Discovery.—A remarkable discovery of fossils of the Permian age of geology has been intimated from Sokolki (Vologda), Russia, by Professor Amalitzki, of Warsaw. The discoveries show that as far north as 60° of latitude there was at the Permian era a fauna and flora which was thought to be localised in India and Africa.

Boston Sweet Pea Show.—The recent ripple amongst the patricians of the beautiful but humble Sweet Pea has brought somewhat vividly to notice the fact that Boston, Lincolnshire, is to enjoy a large Sweet Pea show on the 24th and 25th of July this year. Messrs. W. Johnson & Sons, Ltd., the large seed-growers there, are inaugurating the exhibition, which will also include culinary Peas. This is the second annual show arranged under their auspices, and last year so many as 700 bunches of Sweet Peas were staged.

Horticultural Societies.—Speaking before the members of the Rhode Island (America) Horticultural Society, President Farnum said that horticultural societies are too slightly appreciated. They should be at once recognised as agencies for the welfare of all the people, and ought to be richly endowed. He would like to have horticultural societies in every county of Rhode Island, with buildings of their own, and holding large exhibitions at suitable seasons. The result would be to greatly stimulate a love for horticulture, and promote the culture of health and pleasure-giving fruits and flowers.

Sunday in the London Parks.—On Wednesday, March 12th, a debate took place at the meeting of the London County Council on the proposition of the Parks Committee to pass a regulation prohibiting the playing of games in the Council's parks on Sundays. Protests were made against the Council passing such a recommendation, as this was inconsistent with their policy, seeing that they provided bands, let out boats, and allowed bicycling in the parks. A member said that it should be recognised that London was not Sabbatarian, and also that the Council was not Sabbatarian. Mr. John Burns, M.P., pointed out that the Committee made the recommendation for the sake of old people and young children, to save them the risks they would run if football and cricket were allowed.

American Irrigation Project.—It is announced by President Wheeler, of the University of California, that a Department of Irrigation will be added to the United States Department of Agriculture. Prof. Mead has been appointed to the head of this new department. Lectures, demonstrations, and field classes will form part of the scheme, the object being to qualify young men in the important matter of irrigation, so that they may be able to introduce their knowledge to stations along the Pacific coast. Water storage and supply, and forest conditions, are subjects of growing importance in California, and there seems no reason to doubt that this new departure of the University will be heartily approved and cordially supported by the public and the State. Perhaps the Australian Commonwealth, and those who devote attention to South Africa's interests, may take a hint from the United States Government.

Rose Show Fixtures in 1901.

- June 12th (Wednesday).—Colchester and York†.
- „ 26th (Wednesday).—Richmond (Surrey), N.R.S.
- „ 29th (Saturday).—Canterbury and Windsor.
- July 2nd (Tuesday).—Drill Hall (R.H.S.) and Southampton*.
- „ 3rd (Wednesday).—Croydon and Hanley*.
- „ 4th (Thursday).—Temple Gardens (N.R.S.) and Norwich.
- „ 9th (Tuesday).—Gloucester, Harrow, and Wolverhampton†.
- „ 10th (Wednesday).—Great Stambridge and Worthing.
- „ 11th (Thursday).—Bath, Brentwood, Eltham, Helensburgh, and Woodbridge.
- „ 13th (Saturday).—Manchester.
- „ 17th (Wednesday).—Ulverston (N.R.S.) and Cardiff*.
- „ 18th (Thursday).—Halifax.
- „ 20th (Saturday).—Newton Mearns.
- „ 23rd (Tuesday).—Tibshelf.

* Shows lasting two days. † Shows lasting three days.

The above are the only fixtures definitely arranged that have as yet reached me. I shall be glad to receive the dates of other Rose shows (or horticultural exhibitions where Roses form a leading feature) for insertion in future lists.—EDW. MAWLEY, *Rosebank, Berkhamsted, Herts.*

The Fen Districts.—The fossil remains of a large grizzly bear have been unearthed at Bourne from the clay, level with the roots of the prehistoric forest trees that then covered the Fens. The fossil, we learn, has been sent to the Geological Society's museum in Jermyn Street, London.

Obituary.—The American horticultural papers record the death of Mr. John Galvin, who was born in the Medway district of Kent over seventy-eight years ago. By his death at his late home, 511, Washington Street, Dorchester, Massachusetts, Boston loses her oldest florist and horticulturist. Mr. Galvin emigrated to America at eighteen years of age.

Empirical Gardening.—A correspondent of the "Country Gentleman" notes that, in some parts of the country, garden quacks do a good business by boring holes in trees and placing insect powders, sulphur, and so on, into the trunks as "certain death to bugs and caterpillars." At fifty cents a tree profitable returns are made. The wide-spread ignorance of matters appertaining to gardening is lamentable.

Sweet Pea Society.—Mr. Charles E. Wilkins writes to say:—"I shall be obliged if you will announce in your columns that the adjourned meeting, to be held next Tuesday at Winchester House, E.C., has been abandoned, as the Bi-centenary Committee are calling a meeting for 2.30 on the same day at the Hotel Windsor, Victoria Street, S.W., to form a National Sweet Pea Society."

Daffodil Exhibition.—At the Royal Horticultural Society's meeting to be held on April 9th in the Drill Hall, Buckingham Gate, special prizes will be offered for Daffodils, open to amateurs and gentlemen's gardeners only. First prize, a £7 7s. silver cup, presented to the society by Messrs. Barr & Sons; second prize, R.H.S. silver Flora medal. Group of Daffodil blossoms (Polyanthus varieties excluded), must include some of each section, Magni, Medi, and Parvi coronata, must contain at least fifty varieties, distinct, of thirty of which at least three blooms each must be shown, not more than nine blooms of any one variety may be put up; to be staged in bottles, vases, or tubes not exceeding 3 inches in diameter at the top (inside measurement), and all the stems must touch the water. Quality of flower will count more than quantity, and correct naming and tasteful arrangement will be duly considered. Any foliage may be used, Daffodil or otherwise. No prize will be awarded unless there are two competitors at least.

Proposed National Sweet Pea Society—Important Notice.—Under the chairmanship of Mr. George Gordon, V.M.H., the executive committee of the Bi-centenary Celebration held a meeting at the Hotel Windsor, Victoria Street, on Tuesday afternoon. The publication of the complete report was first dealt with, and tenders having been received and discussed, that of Mr. W. Etherington, Central Printing Works, Wandsworth, was accepted. The work will be put in hand immediately. The question as to the desirability of forming a National Sweet Pea Society was unanimously decided in the affirmative. A deputation from the meeting at Winchester House last week was received, with a view to collaboration; and the promoters were invited to attend a public meeting, to be held at the Hotel Windsor on Tuesday, March 26th, at 2.30 P.M., when the matter will be fully discussed, and a society be duly constituted. The promoters of the City meeting decided to abandon their scheme in favour of that of the committee. The committee trust that the meeting will be a thoroughly representative one.

East Anglian Horticultural Club.—Three practical papers were read upon "The Cultivation of Mignonette in Pots," and were discussed before the above club on the 6th inst. After the reading of the papers the judges awarded first place to Mr. D. Howlett. Mr. W. Rush was a very close second, his paper being thoroughly practical, but not so exhaustive. Mr. C. Matthews was awarded third. A lengthy discussion followed, Mr. Chettleburgh (Worsted) advocating something new for those who wished to grow trained specimens of Mignonette—viz., that of striking them from cuttings. Mr. Bolton, a successful grower, said he found sowing the seeds in small pots and keeping from too much wet, with subsequent "pottings on," his best plan. An impromptu discussion was next started upon the subject, "Why Hollies bloom and not ripen fruit." Great interest was taken in the subject. Some fine cut flowers and a well flowered plant of Streptosolen were staged by Mr. G. James, gardener to Mr. E. T. Boardman. Mr. Matthews exhibited very fine sticks of Rhnbarb. Mr. D. Howlett and Mr. W. Rush staged well grown flowering and foliage plants. Mr. C. Hines, as usual, had good vegetables and fine fruit.

Seed Germination.—From experiments by M. Demonssy it appears that seed germinate in distilled water if the distillation is made in glass, not in copper, as copper checks the growth.

Trees for the Strand.—We have a Utopian picture presented to our imaginations by the announcement in the "Westminster Gazette" that the north side of the widened Strand is to be planted with trees.

Pennsylvanian Horticulture.—We learn from an American contemporary that the Bill establishing a bureau of horticulture and pomology in the Department of Agriculture of the State of Pennsylvania, with a chief at a salary of 2500 dols., and one clerk at 1500 dols. annually, has been defeated.

Crystal Palace Fruit Show.—The prize schedule for this show will be issued in a week or ten days by the Royal Horticultural Society, and will contain an authoritative list of dessert and cooking Apples, Pears, and Plums, post free 1d. Donations towards the prize fund will be gratefully received by the society.

Richmond Park.—The First Commissioner of Works was asked by Mr. Pilkington in the House of Commons on Friday last, whether the complaints made by the Kingston Municipal Society about the careless throwing away of glass bottles by picnic parties in Richmond Park, could not be adequately attended to.

Primulas from Forest Hill.—The Primula season is at its heyday for the year—that is, so far as the Chinese Primulas are concerned. We have to acknowledge the receipt of a nice boxful of blooms from Messrs. John Laing & Sons of Forest Hill, S.E. Laing's Gigantic in the red, white, and rose varieties are really handsome, and of good form and substance. Blue has been secured in this and other strains, so that, taking all kinds, one can have almost all colours of the rainbow. The stellata hybrids please us exceedingly well, especially the crimson and the pink varieties. The blooms of Laing's double Primulas are as fine as any we have recently seen.

Hessle Gardeners' Mutual Improvement Society.—Members of the above society held their fortnightly meeting in the Parish Schools, March 5th, Mr. Blair in the chair. Mr. Moody, gardener to — Leatham, Esq., Newland, near Hull, read a very instructive and interesting paper entitled "Items of Interest for the Advancement of General Gardening." Mr. Moody's remarks were of a practical nature; in his opinion every young gardener should become thoroughly grounded with plain, practical experience before they ventured upon the study of science.—J. F. D.

Newport Horticultural Association (Dundee).—At the last meeting of this Association a paper was read by Mr. James Reid, of Dudhope House Gardens, on the subject of "The Artificial Means of Propagation." Low-growing or spreading herbaceous plants and alpine are best propagated, he said, by a simple method of division. In other cases "layers" is the only one which is satisfactory. In grafting success depends upon keeping the inner bark of the scion in contact with that of the stock until union took place. In the modification of grafting, known as "arching," neither is the scion separated from the parent nor is the head of the stock cut away. In "budding" a T-shaped slit is made in the stock where the bud is to be inserted, and the bud slipped into the opening.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901.										
March.										
Sunday ..10	N.N.E.	deg. 34.0	deg. 33.3	deg. 42.9	deg. 30.0	Ins. —	deg. 41.2	deg. 43.0	deg. 44.2	deg. 23.1
Monday ..11	N.N.E.	32.2	30.6	45.1	30.0	—	40.0	42.8	44.2	21.8
Tuesday 12	N.N.E.	40.9	39.9	53.3	31.9	—	40.3	42.5	44.2	30.2
Wed'sday 13	N.N.E.	37.5	36.3	42.1	31.5	—	41.6	42.9	44.2	24.3
Thursday 14	E.N.E.	40.2	38.8	47.3	36.7	—	41.0	42.7	44.2	30.5
Friday .. 15	E.	39.9	37.9	42.1	37.7	0.09	41.5	42.8	44.2	36.3
Saturday 16	N.E.	38.2	37.6	45.1	36.8	—	41.5	42.8	42.2	36.2
MEANS ..		37.6	36.3	45.4	33.5	Total 0.09	41.0	42.8	42.2	28.9

A week of dull, sunless weather, with very cold winds from N.E. A small quantity of rain fell on the night of 15th.

Figs Under Glass.

THE earliest forced trees in pots of the very early varieties, such as Early Violet and St. John's or Pingo de Mel, that were started in gentle bottom heat at the middle of November or early in December, are now showing signs of taking the last swelling for ripening. Brown Turkey and White Marseilles, however, are still stationary. They must not be hurried, as this is the most critical time in Fig culture, checks of any kind causing the fruit to fall, and this must be carefully guarded against by maintaining an equable temperature, making the most of fine days for giving air, and closing early so as to secure safe advancement. After the fruit gives indications of ripening water must be withheld; yet, though less water at the roots is necessary, there must not be anything like dryness in the soil. Until the fruit changes for ripening the trees must be well supplied with liquid manure, giving the whole rooting area a thorough supply, and to trees safely passed the flowering stage a thorough soaking of water a few degrees warmer than the bed acts like a charm on Fig-tree roots, especially when a light mulching is supplied of sweetened, lumpy manure, as this absorbs moisture when the trees are syringed, and the changes it undergoes attract the roots, whilst a genial vapour is given off highly favourable to the foliage. Syringe twice on fine days, once a day when the weather is dull, always giving the second syringing in time for the foliage to become fairly dry before night. Maintain a night temperature of 65° in mild weather, 70 to 75° by day. Stop side shoots at the fourth or fifth leaf, not allowing them to become crowded.

Early forced planted-out trees succeed best where the roots are confined to narrow limits. Top-dress as often as it becomes dry, as that is necessary for decay and the evolving of manurial matters, especially the element ammonia, which in minute quantities, and a regular supply, has a marked effect on the health of the trees. Syringe the trees twice a day, or damp the paths and other surfaces frequently on dull days.

Keep the temperature at 60° to 65° at night in mild weather, 5° less on frosty nights, ventilating from 70°, and keeping through the day between 75° and 85° from sun heat, attending to air-giving early, closing with a brisk heat about three o'clock in the afternoon, or early when cloudy. The growth is rapid, therefore give frequent attention to stopping of side shoots at the fifth or sixth leaf, as these give the best results in the second crop; but avoid too many, for Figs are produced in proportion to the light received; hence, when two shoots or more appear, rub off all but one, retaining those only that can have full exposure to light, otherwise they will not be sturdy and fruitful. Train terminals and successional growth to replace those reaching the limits, and to be cut out after fruiting, to their full length.

For general purposes Brown Turkey stands unrivalled, White Marseilles being a fine, large, roundish fruit, and freely produced where there is room. Grizzly Boujassotte is the most constant for delicious flavour, and ought to have heat. For late supplies Negro Largo, Nubian, and Agen are excellent, but these must have heat to ripen the

late fruits perfectly. The grand secret in growing Figs is plenty of light and heat, and the principal points in their culture consist in keeping the growths thin, their points always facing the light, and when growing afford generous treatment.—GROWER.

Yucca recurvifolia.

As a companion to the illustration of the specimen of *Yucca gloriosa* figured in the *Journal of Horticulture*, November 29th, page 487, grown

in the Botanical Gardens, Edgbaston, it occurred to me that the annexed photograph of a well flowered specimen of *Y. recurvifolia* (syn. *recurva*, *pendula*, and *japonica*), kindly contributed by Mr. Thos. Hewitt, Fernleigh, Solihull, might prove equally interesting. The plant in question is about twenty years old, and was planted by Mr. Hewitt in its present site about seventeen years since, and flowered last summer; the well developed bold paniculate inflorescence was just 4 feet long. Altogether the plant was an object of no ordinary attraction, and backed up as it was by the Ivy-mantled wall of the dwelling, interspersed with the beautifully contrasting flowers of a plant of *Clematis Jackmanni*. There appears to have been considerable confusion or uncertainty regarding the identity of *Y. gloriosa* and *recurvifolia*. The "Index Kewensis," I observe, gives *recurvifolia* simply as a form or variety of *Y. gloriosa*, which it maintains as the true species. According to Mr. Baker there are ten distinct varieties of *Y. gloriosa*, but "Johnson's Gardeners' Dictionary" intimates that there are nearly eighty varieties of this species. It is a matter of surprise, then, that so few of them are commonly cultivated in this



YUCCA RECURVIFOLIA.

country. Perhaps the major portion of them are so nearly alike in character that it has not been deemed worth while to cultivate them, excepting in botanical gardens like Kew. I do not recollect ever having heard or read that the various species of Yuccas have been known to ripen perfect seeds in this country. The free-flowering *Y. filamentosa* is said to have done so. The famous American State entomologist, the late Mr. Riley, discovered that the aid of a moth (*Pronuba yuccasella*) was required for the fertilisation of the flowers of all the Yuccas, thus accounting for the persistent sterility among cultivated Yuccas.

The Yuccas, like the American Agave (*Agave americana*), owing to the number of years of growth ere they flower, are popularly, though erroneously, regarded as flowering once only in a century. In reality they flower but once, the mature condition being acquired in a longer or shorter period, according to conditions under which they are subjected. After flowering lateral shoots develop, which may in their turn flower.—WILLIAM GARDINER.

Mr. George Norman, V.M.H.

THE inclusion of the Marquis of Salisbury's head gardener (whose portrait we here present) amongst four who are newly added to the list of Victoria Medalists of Honour in horticulture by the Council of the Royal Horticultural Society, will be gratifying to all English gardeners. The Victoria Medal is to the horticulturist what the Victoria Cross is to the soldier—both are honours of high distinction. Mr. Geo. Norman has been at Hatfield House, Hatfield, for the past quarter of a century, during which time his labours in all departments of gardening have been arduous but thoroughly successful. His position as head gardener to the noble Marquis demands a knowledge of the highest gardening in all its branches, and from what we and many of our readers have seen either at Hatfield or at southern exhibitions, one has practical proof of Mr. Norman's powers. It is with exceeding great pleasure that we offer congratulations to our worthy friend.

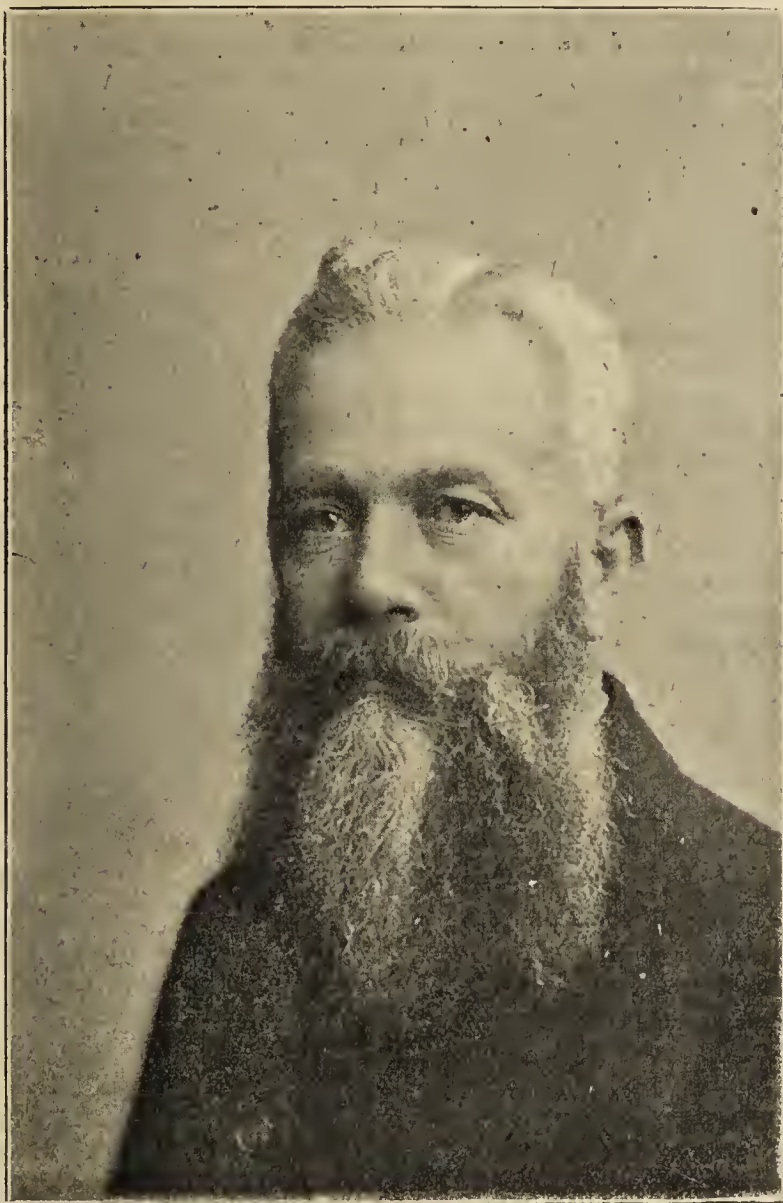
Royal Horticultural Society.

Scientific Committee, March 12th.

PRESENT: Dr. M. T. Masters (in the chair); Rev. W. Wilks, Prof. Boulger, Dr. Russell, Dr. Müller, Messrs. Houston, Douglas, Bennett-Poë, Saunders, Sutton, Rendle, McLachlan, Michael, Bowles, Worsley, Hogg, Chapman, Gordon, Prof. Church, and Rev. G. Henslow, Hon. Sec.

Double flowers, production of.—Mr. Douglas contributed the following additional observations on this subject. He said, "I can speak of the Carnation and Picotee only from my own experience, and from what I have seen of the garden or German Stock. I have worked upon the Carnation over thirty years, raising a considerable number annually, and always saving the seed from the best double flowers, and the very best varieties in the various classes. Taking the average of seasons I get 5 per cent. double flowers as good as the parents, 12 per cent. single flowers, of every shade of colour favoured by the Carnation. This would leave 83 per cent. of double flowers, but in no respect equal in form to the parents. The finest lot of choice varieties I ever had was in a hot, dry season. The plants were well supplied with water, and many one-year-old plants produced upwards of 200 blooms each. I remember discussing the production of Stock seed some ten years ago with Mr. John Ward, then, as now, a market grower at Leytonstone in Essex. Speaking from his own experience, he informed me that he always obtained the largest percentages of double-flowered Stocks when he saved the seed from plants grown in pots. Subsequently I was being shown over a large establishment in Germany, where enormous quantities of seed were saved, and I found that all the best Ten-week Stock seed was saved in Germany exactly as Mr. Ward saved his seed in Essex. Thousands of flower pots about 5 or 6 inches in diameter were arranged on a wooden staging fully exposed to the open air, and I was also informed that it was necessary to grow the plants in this way to make sure of the seed producing a large percentage of double flowers. The Poppy has a greater tendency to produce double flowers than any other plant known to me, and certainly the tendency is greater in rather exhausted soil, as can easily be proved by allowing a bed to sow itself from the previous year's bloom, and the plants to flower on the same ground without making an addition of soil or manure to the bed."

Abutilon hybrids.—Professor Marcus Hartog sent the following communication with specimens from Queen's College, Cork:—"I send you herewith specimens of some of my new Abutilon hybrids. The male



MR. GEORGE NORMAN, V.M.H.

was Abutilon vexillare, and the mother-plant a hybrid of the Darwini Boule de Neige type, which we called 'Petticoat,' from its wide open habit. This plant is an exceptionally free seeder; its flowers are orange streaked with brown, and its leaves show very little trace of variegation. The hybrids all show a marked transverse depression at the insertion of the deltoid calyx lobes on the tube, and most of them show colour in the calyx, like the male, and some sign of deep red or purple spotting in the depths of the corolla, which in most plants is elongated, like the sire. The one that I have called Blanche has a much more spreading corolla, of more substance than the rest, with a clear tendency to become pleiomorous—to double, in fact. Variegation is very irregular, even in the open ground, and becomes very slight in the winter quarters. It appears as a margination, gradually increasing till the only dark green parts lie along the greater veins. Again, in the open, some of the plants exhibit a marked purpling of the parenchyma on either side of the veins, which I have seen in no other Abutilons. All these hybrids agree in a much more free branching habit, with

greater fulness of growth than any others that I know. The more erect ones send out more numerous lateral branches, and do not become leggy, while the spreading ones produce numerous branches that fill up the centre of the plant, and keep it from looking straggly. The summer flowers are at least half as large again as the winter ones. The plants were raised from seed in the autumn of 1899, kept through the winter in a cold orangery, where they made no progress to speak of, and planted out at the end of May last year. In the autumn they were potted off, and have been kept in a greenhouse, far too crowded for them to do well. I may note, that among the Abutilon hybrids that we have, the roots are almost always swollen with galls, produced by the nematode Heterodera radiculicola, with which the mould Thielavia Hartogi (Butler) co-operates. These galls formed the subject of an interesting research by Dr. Butler, now cryptogamist to the Indian Government, and a preliminary abstract of it was published in the B.A. Report for 1900 (Dover). I have found the addition of soot to the soil useful in checking this disease, though I am not sure that it stops it. I take the opportunity to show an inflorescence of a hybrid Saraca (indica tetrandra) raised by the late Wm. Crawford at Lakelands, Cork, and acquired by gift of his executors when the collection was broken up at his death. These hybrids, of which we have five distinct forms, are singularly ornamental shrubs for the stove, where they flower for nearly three months, beginning in February."

Though interesting from a scientific point of view, the Abutilons were not thought to be improvements upon existing plants.

Carnation leaves decayed.—Mr. W. B. Vernon, of Oswestry, sent some leaves decayed at the tips, of a pink Malmaison, observing that the browning of the apex of the leaves occurs almost every year about this time. They were sent to Dr. W. G. Smith for examination and report.

Late-flowering Chrysanthemum.—Mr. Holmes sent a blossom of Lady Canning, with the following observation:—"I have never seen a flower so late as this before. It was in a pot in a cold house, and has been in blossom since the week before Christmas. I also send a fasciated stem of Daphne Cneorum."

Snowdrops, diseased.—Dr. W. G. Smith sent the following report upon specimens submitted to him:—"I regard the Snowdrops sent from last meeting of the Scientific Committee as attacked by the Botrytis stage of the fungus Sclerotinia galanthi. This was described and figured by Worthington G. Smith ('Gardeners' Chronicle,' 1889); George Massee describes it in the 'Kew Bulletin,' No. 124, and in his latest text-book of plant diseases. There is no need for me to submit a formal report, the name and above references should be enough to mention in the R.H.S. Journal report. I found the Botrytis form of spore working its way up the green parts of plants sent; now these are a shapeless mass with the Sclerotium stage present in numbers. As to remedy, I can suggest nothing better than the measures mentioned about a year ago in a report to the committee on Daffodils attacked by

same disease. I have not the Journal by me now, so cannot give you the page where above is."

Mistletoe in the Oxford Botanic Gardens.—Inquiries having been made as to the origin of the numerous plants and varieties of *Viscum album* now on various trees in these gardens, the following observations have been received from Mr. T. E. Jefferies, Oxford:—"I understood from the late Mr. W. H. Baxter that his father established the plant on Apple trees growing in a slip of ground outside the garden western boundary wall many years ago. Now it is met with in, or adjacent to, the gardens on perhaps a greater number of different kinds of trees than could be seen in a similar area anywhere, and probably the diversity of their forms is equally exceptional. On fresh specimens the size of the fruits vary considerably, the largest fruited plants being rendered far more striking as regards their whiteness, or, as may be said, their effective translucent appearance, more especially where they aggregate in clusters and become distinguished by being so prolific." Mr. Burbidge records the fact of *Viscum* growing on the following trees in the D.B. Gardens:—"Ostrya vulgaris, Horse Chestnut, Pavia flava, Lime, Maple, Hawthorn, Apple, Willow, Beech, and Viburnum sp., but very weakly on the last two. Outside the gardens it grows on two Poplars."

Cattleya, monstrous.—Mr. Coleman exhibited a form of *Cattleya*, which Dr. Masters undertook to examine.

Leopard Moth.—Mr. Gordon referred to the damage done by the caterpillars of this moth in boring up branches of the Spanish Chestnut, Apple trees, &c. He asked for information as to how long the caterpillar lived. Mr. McLachlan observed that the general misconception as to this was that it really bored upwards through the pith and not downwards, as is usually supposed. The only remedy was to insert a wire and kill it by probing. The fumes of cyanide of potassium was another remedy, if it could effectually reach the caterpillar. As to the duration, two seasons were required to complete the transformation, while the goat moth caterpillars took three years.

Apple, rotten.—Mr. Houston exhibited a remarkable case of decay, in that it had begun in the centre and spread uniformly outwards; so that the sound part came away like a hollow shell, leaving the perfectly spherical decayed central mass. There was no apparent fungus or other cause to account for it.

Crinum sp.—Mr. Worsley exhibited some stolons of a species of *Crinum* known as *jamaicense*. It is found in Jamaica, on the N.E. coast, near the sea, exposed to the N.E. Trade Winds. It is an unrecorded species, and since the peculiar method of propagation by fleshy stolons one joint of which swells into the bulb, are characteristics of N. America. It was Mr. Worsley's opinion that it was derived from that country by ocean currents floating the seeds or perhaps bulbs to the shore of Jamaica.

Specimens from Botanic Gardens, Dublin.—The following interesting plants, &c., were received from Mr. Burbidge, with the following remarks:—"1, Herewith I send two or three sheets of Birch-bark paper, from *Betula utilis*, D. Don (= β Bhjopattra, Wall). It is written that paper was first invented and made by the Chinese; but I suppose the Birch trees of both East and West (*vide* Longfellow's poem of 'Hiawatha'), to say nothing of the wasps, made paper long before even the Chinese! Note how sensitive it is to heat and moisture. It is difficult to prevent its becoming a natural scroll. Was it the origin of all scrolls of bark, and afterwards of animal skins, used as a writing surface or paper? We have three trees, the largest 20 feet high, and we value them very highly, not only for their silver-stemmed beauty, especially during winter, but especially because they were born and raised here from seeds, which Sir J. D. Hooker, K.C.S.I., &c., sent to the gardens eighteen years ago. In the same packet came seeds of the Himalayan Bird Cherry, *Prunus (Padus) cornutus*, with its old bronze-coloured bark, now 25 feet high, and it flowers and fruits freely every year. 2, Flowers of the old greenhouse plant, *Canarina campanulata*, of the Canary Islands (1696), *vide* 'Bot. Mag.' t. 444. 3, *Salvinia natans*. As to this, note its waterproof coating of short hairs, which carries down an air film if the plant be temporarily submerged; note also its lifeboat-like habit of 'righting' itself when placed into a vessel of water. Like 'Duckweed' (*Lemna*), *Azolla*, and other aquatics, it robs all submerged plants of light, &c., by its (and their) habit of forming a dense green mosaic on the surface of the water. *Azolla* kills or crowds out *Lemna* minor here in sheltered open-air tanks! 4, *Acacia sphærocephala* (? = *A. cornigera*), 'Buffalo-horn Acacia,' myrmecophilous (*vide* Belt, T., 'Naturalist in Nicaragua,' 8vo, London, 1874). Note the big hollow spines, in which ants live; and also the yellow waxy secretion and exudation at tips or apices of young leaflets. I do not think this substance has received any chemical study. This 'ant-manna' seems to be of no actual or direct service or relief to the *Acacia*, as are some secretions; the resinous secretions that at times close the absorptive and secretive glands on the leaves of the *Rosa alpina* for example. In any case it would be a step forward to know exactly what this yellow wax-like leaf product really is. 5, An Indian 'Dodder,' growing on Ivy in cool greenhouse here, *Cuscuta reflexa*: Hooker, in 'Himalayan Journals,' Minerva Library, 1891 edition, page 27, says:—"Dodders (*Cuscuta*) covered even tall trees with a golden web." This species is so rampant that it might have been one of them. It will grow on Ivy, *Pelargonium*, *Cotoneaster*, *Calceolaria*,

Carex, *Jasmine*, *Forsythia*, *Cytisus*, *Fuchsia*—indeed, nothing seems to come amiss, and it is even self-parasitic (like the Mistletoe), this phase of its life history having been discovered by Dr. Henry H. Dixon, of the Physiological Laboratory, Trinity College, Dublin, a few years ago, and described in the 'Proceedings of the Royal Irish Academy,' as also in 'Notes from the Botanical School of Trinity College, Dublin,' No. 4, January, 1901, chap. xvii., page 146. The plant flowers freely late in summer or autumn, the flowers being white, and not unlike a small Lily of the Valley (*Convallaria*) bells, having a honey-like perfume, which is very attractive to flies of many kinds. *Azolla filiculoides*, on water in muddy outdoor tanks here, is now a lovely copper-red colour. I see Hooker (*loc. cit. supra*), page 255, mentions Lake Catsuperri, alt. 7150 feet, bordered by a broad marsh of bog moss, in which was abundance of *Azolla*, colouring the waters red."

Apple Lamb Abbey Pearmain.

MESSRS. J. VEITCH & SONS, Ltd., Chelsea, staged a splendid dish of this dessert variety of Apple (see illustration), at the meeting of the Royal Horticultural Society on the 12th inst., when it received an award of merit from the Fruit Committee. It has been known for nearly one hundred years. The wife of a certain Neil Malcolm, Esq.,

of Lamb Abbey, near Dartford, in Kent, raised it in the year 1804 from the pip of an imported fruit of Newtown Pippin. The late Dr. Hogg mentions these interesting facts in "The Fruit Manual." His description of this Apple is as follows:—"Fruit small, 2½ inches wide and 2 inches high, roundish or oblate-oblong, regularly and handsomely shaped."



APPLE LAMB ABBEY PEARMAIN.

Skin smooth, greenish yellow on the shaded side, but becoming clear when at maturity. On the side next the sun it is dull orange, streaked and striped with red, which becomes more faint as it extends to the shaded side, and dotted all over with minute, punctured, russety dots. Eye rather large and open, with long, broad, divergent segments, reflexed at the tips, and set in a wide, deep, and plaited basin. Stalk from ¼ to ½ an inch long, slender, deeply inserted in a russety cavity. Flesh yellowish white, firm, crisp, very juicy and sugary, with a brisk and rich vinous flavour. A dessert Apple of first-rate quality, and very valuable both as regards the richness of its flavour and the long period in which it remains in perfection; it is in use from January till April. The tree is healthy, a free-grower and good bearer."

Fresh Fruit Imports.—We have frequent opportunity of showing how large are the quantities of fresh, or as it is called "green fruit," imported into this country from abroad. The following little list, however, which we extract from "The Grocer" newspaper, shows the official account of what was imported in the week ended March 2nd:—Raw Apples, 34,663 cwts.; Bananas, 14,445 bnchs.; Grapes, 208 cwts.; Lemons, 18,048 cwts.; Oranges, 76,927 cwts.; Pears, 229 cwts.; Plums, 34 cwts.; Tomatoes, 11,082 cwts. The stock of dried fruits in London alone on February 28th was:—Currants, 9610 tons; Valencia and Denia raisins, 2225 tons; Greek Sultanias, 224 tons; Smyrna Sultanias, 2945 tons; Muscatels, 79 tons; Turkey Figs, 2825 pkgs.; Faro, Greek, and Malaga Figs, 3135 pkgs.; Jordan Almonds, 3260 boxes; Valencia Almonds, 6240 pkgs.; Sicily, Bari, Oporto, Persian Almonds, 4370 pkgs.; Barbary Almonds, 6190 pkgs.; Canary Almonds, 2655 pkgs.; shell Almonds, 1515 pkgs.; Bussorah, Taflat, and Egyptian Dates, 253,985 pkgs.; Plums and Prunes, 47,220 pkgs.; Imperials—French, 275 cases; Apples (evaporated), 9380 pkgs.; dried Apricots, 16,450 pkgs.; dried Pears, 1325 pkgs.

Societies.

Beckenham Horticultural Society.

On Friday last Mr. J. Randall, of Brook Nursery, gave to a good attendance of members a lecture on "Easy Methods of Cultivating the Chrysanthemum and the Indian Azalea." He remarked that he did not essay to teach those that were versed in the art of growing those beautiful blooms for exhibition, but rather those that wished to grow cut flowers in quantity with a minimum of labour. All varieties were not amenable to the treatment advocated, and which the lecturer had proved to be profitable, but such as W. H. Lincoln, Souvenir de Petite Ami, &c. He then gave directions for their culture and also for that of the Azalea indica. In addition to the two items dealt with, the lecturer gave good practical advice upon the culture of the Tuberose, which was highly appreciated.

National Amateur Gardeners (Liverpool Branch).

The first meeting of the session was held in the Common Hall, Hackin's Hey, on March 7 h. Mr. W. Muir occupied the chair, and there was a capital attendance. The president signified his intention of giving monthly prizes for the best collection of cut flowers and the best plant in bloom. The presentation of medals and certificates was proceeded with. Miss Hunter and Mrs. McGregor being the recipients of two each, silver and bronze. A capital syllabus has been prepared, the president remarking that the list of lecturers was of a high order. In the ante-room the exhibits had been tastefully arranged, Mrs. Stevenson winning the Hyacinth and Tulip classes, Mrs. McGregor for spring flowering bulbs, Mr. Dale for a plant in bloom (a grand Cyclamen), and Mr. Arthur Dodd for cut flowers. The latter—a new beginner—exhibited fine cut Orchid blooms, and Mrs. Stevenson miscellaneous plants for points.

Birmingham Gardeners' Association.

At the society's last meeting Mr. R. C. Bick, gardener to Walter Chamberlain, Esq., Harborne Hall, Harborne, gave a very interesting exposition of lantern-slide pictures of photographs taken by himself of several garden landscape views of the pleasure grounds under his charge, and including a few of the fine old arboreal features of Harborne parish churchyard, an especial one being a tall and fine old Horse Chestnut clad with a mantle of fleecy snow on the 4th of February last. Views also of the lych gates (of which there are three) in association of the avenues and other tree scenery, also evoked expressions of admiration, as did also views of several celebrated castles and picturesque old gardens, such as the topiary work at Elvaston Castle. The subject for the next fortnightly meeting is "The Gardens of the Riviera," with lantern-slide scenes, by Mr. H. Thomas, assistant editor to "The Garden," when a competitive exhibition of salading in competition will be held.

Bristol and District Gardeners' Mutual Improvement Association.

The fortnightly meeting of this society was held on the 14th inst., at St. John's Parish Room, Redland, Mr. G. Brook presiding. The lecture for the evening was on the "Fuchsia," and was given by Mr. J. Julian of Cardiff, and hon. secretary of the Cardiff Gardeners' Association. Coming for Fuchsias at the outset an elegance that marked them out for decoration, he gave a short history of their introduction into this country about 1788. He gave details of the cultivation from the time of putting in cuttings until the specimens reached a height of 6 feet and a diameter in proportion. The best time for propagating he gave as February, the cuttings, when rooted, to be continually reported, until pots 16 inches in diameter were reached. The compost he recommended was loam, leaf mould, and manure, with an addition of silver sand. He also gave instructions as to pinching, draining, feeding, the kind of structure best suited to the culture of Fuchsias, and the method of dealing with insect pests. Mr. Julian's lecture was much appreciated, and he was heartily thanked, on the motion of the chairman.

Reading and District Gardeners' Mutual Improvement Association.

The last meeting of this association was well attended, Mr. T. Neve, chairman, presiding. The subject was "Peach and Nectarine Culture: New and Old Methods Contrasted." This was introduced in a very practical and racy manner by Mr. W. Iggnlden of Frome, the following being a few of the points raised:—*Styles of Houses:* Lean-to, three-quarter span, and span-roofed; advantages and disadvantages in each. Preference given to rather high span-roofed houses with either single or double cross trellises, planting trees back to back in the latter instance. *Borders.*—Where natural conditions are unfavourable, excavations and completely drained and re-made borders are necessary, but market growers have the advantage in this respect, in that they select positions that only require trenching and slight additions made to the ordinary soil. *Trees, Maidens v. Trained.*—The advantages being all in favour of the former. Maidens are the quickest to attain to a heavily productive state, and develop into the finest as well as most lasting trees. Lecturer mentioned having planted a number of maidens under glass in March, 1899; fifteen months later each were being cleared of from two dozen to four dozen first-sized fruit, fetching the highest market prices. An interesting discussion followed, members pointing out that there was a great difference between the market gardener and private grower, and therefore the culture must be different.



Hardy Fruit Garden.

Protecting Outdoor Peaches and Nectarines.—When the blooms are about to expand some temporary protection is needed during the prevalence of unfavourable weather. Cold, dry weather, without frost, is not altogether unfavourable, but rather wet, and storm, and frost is the sort of weather which damages fully opened blooms. If the flowers are open on outdoor walls during such a period, it is because warmth and sunshine have preceded and induced the flowers to swell and open. Some slight protection should therefore be given during this most critical time. It is as well to fix protecting material early and use it for the purpose of retarding the blooms, that is to say, when warm sunny mornings prevail the blinds might be drawn down to prevent the warmth acting upon the wall and trees. This has the effect of causing the flowers to develop later, when the climatic influences are more likely to continue favourable and not suddenly change. If the conveniences exist for setting up blinds, or they can be readily and temporarily fixed, this should always be done, so as to be able to meet sudden emergencies, the time when protection is most needed.

Copings and Curtains.—Walls of choice and valuable Apricot, Peach, and Nectarine trees ought always to be furnished with a coping which can be readily fixed and taken down. The main object of a coping is to provide something to which blinds or curtains may be attached and held clear of the trees either when or when not in use. The best material for protection is woollen netting. Other suitable material, however, consists of tiffany, frigi domo, and Hessian. Canvas is sometimes used, but it is too dense in texture, and difficult to manipulate in drawing up and down. An iron rod should run along the front of the coping, but clear of the edge. Place on before fixing a sufficient number of brass rings, and attach these to the upper edge of blinds. Iron rods, too, may be attached at the bottom of the material at about 2 feet from the ground and fixed to uprights. When not wanted the curtains may be drawn on one side.

Poles and Netting.—Another efficient arrangement is poles of stout wood laid against the wall, standing out 2 feet at the bottom, sinking their base a little way in the soil. A double or treble thickness of fish netting may then be laid across, and allowed to remain permanently until protecting material is no longer needed. Poles may not be needed if the netting will hang clear of the blossoms. The poles will also carry other material than nets, but it will be desirable to remove it when not actually needed to protect.

Planting Fruit Trees.—Although late in the season for planting, the weather may be more congenial and the soil in a better state than it has been for some time. It is better to wait for suitable conditions than to plant in wet and sticky soil. It is assumed that for spring planting the soil has been prepared for some time, and has had the benefit of frost, snow, rain, and, finally, drying winds, to pulverise and ameliorate the surface. Under these circumstances the ground is sufficiently consolidated, and it only remains to excavate the holes and plant. Should the ground need pre-aring first, then bastard trench it, and if light consolidate it by treading before rain falls upon it. Shallow wide holes should be taken out at the proper distance apart, according to the class of tree to be planted. The trees must have special attention, endeavouring to prevent the roots drying by exposure. This can be done by keeping them covered with soil. Previous to planting, prune away the broken and jagged ends to clean and healthy parts, so that when growth begins the free production of fibres is encouraged. Spread out the roots to their full extent when planting the trees, and cover with soil from the stem outwards, burying the upper roots about 3 inches. Stake the trees firmly, and mulch over the roots with littery manure.

Pruning Newly Planted Fruit Trees.—Trees or bushes recently planted, either in autumn or spring, should as a rule be pruned rather closely back, just when growth is commencing. This is more especially the case when roots were few, because with weak root power it is evident growth will be weakly if the vigour the tree possesses has to be spread over a long length of wood. Young trees especially require to make new growth of a vigorous character, and such as will form a substantial foundation of branches, therefore cut back to firm parts with bold wood buds pointing in the direction the growths are wanted to extend.

Planting Strawberries.—Strawberry plants wintered in nursery beds may now be lifted and planted permanently on ground deeply dug and liberally manured. These plants lift with excellent balls of soil and have numerous roots, all of which remain attached if the roots are carefully lifted. They are readily moved, and become firmly established in a very short time. On the contrary, plants which have no soil attached to the roots require careful treatment. They must have the roots spread out on small mounds of soil in shallow drills, spreading over them light fine soil, and make firm, watering if necessary.

Fruit Forcing.

Cucumbers.—The winter fruiting plants will require frequent attention for removing exhausted growths and bad leaves, thinned where too crowded in order to encourage a free growth and a successional supply of clean straight fruit. Stop the bearing parts two joints beyond the fruit, and secure the growths to the trellis. It will much invigorate the plants by removing a little of the surface soil where it can be done without injuring the roots, supplying a top-dressing of turfy loam with a sprinkling of approved fertiliser. When the roots are active in the top-dressing sprinkle a few sweetened horse droppings on the bed occasionally, with a small handful of soot alternating with the fertiliser, so as to get plenty of vigour in the plants and colour in the fruit. If that is not enough, and the plants crop heavily, supply liquid manure of a nitrogenous nature, such as nitrate of soda, at the rate of a quarter ounce to a gallon of water, always having the water or liquid equal in temperature to that of the mean of the house. Young plants will need more soil, adding to the ridges or hillocks as the roots protrude, always having it previously warmed and in a properly moist condition. Maintain a night temperature of 65° to 70° when mild, 70° to 75° by day, keeping through the day at 80° to 85° or 90° from sun heat, closing early in the afternoon with abundance of moisture, so as to run up to 95° or 100° on bright days, securing a steady bottom heat of 80°, though in commercial culture this is generally dispensed with.

Manure-heated pits and frames set to work some weeks ago will require good linings. This is effected by removing as much of the outside of the beds as can be spared, and if the heat has not much declined it will suffice to line one-half of the bed at once, deferring the other half until the heat is again on the decline. To be effective the lining should be 2 feet wide, for thin linings are soon spent, and sooner require renewal. Look carefully to the frame after the heat generates in the lining, to see that there is no accumulation of rank steam, preventing it by a little ventilation, especially when the sun shines. Add more soil as the roots spread on the surface, taking care to have it warmed. Attend to training the shoots, not overcrowding them, pinching the leaders about 15 inches from the sides of the frame, and stop the laterals one or two joints beyond the fruit. In watering do not wet the foliage more than can be helped, as it is soft and easily injured and affected by damp or scorched by sun. A good night temperature of 65° to 70°, falling 5°, or even 10°, on cold nights, should be maintained by the needful night covering. Admit a little air at 75°, allowing the temperature to rise to 85° or 90°, closing before it falls below 85°, and if it rise to 90° or more the day's work will be better, and a good heat stored for the night. The night coverings should be put on by the time the sun is off the lights, say five o'clock in severe weather, never delaying beyond six o'clock in the afternoon at this time of year.

Peaches and Nectarines.—*Earliest Forced Houses.*—Where Peaches, such as Alexander, Waterloo, Early Beatrice, and Early Louise, with Advance and Cardinal Nectarines, have been started in December, and brought on under safe conditions in respect of temperature, they will now have completed stoning, and after this there is little danger of the fruit dropping, provided the trees are properly supplied with water and nourishment at the roots, the foliage kept clean by syringing, and due moisture maintained in the atmosphere. If there be any deficiency in these respects, and the ventilation be such as to cause checks, the fruit may ripen prematurely; that is, not complete the final swelling properly, turning soft and dropping, the quality being very inferior, as also is the appearance of the fruit. Where the fruit is placed at a disadvantage for receiving light, bring it round so that the light will fall on the apex, supporting it by laths placed across the wires of the trellis, or otherwise draw aside or remove overshadowing leaves. Keep the laterals closely pinched, and stop overgrowing shoots. A temperature of 60° to 65° at night, and 70° to 75° by day, with 10° to 15° rise from sun heat, will be necessary to have the fruit ripe at the close of April or early in May.

Second Early House.—Disbudding must be gradually and carefully done, removing the strong, ill-placed shoots, and heel in the leading and successional growths, taking care not to overcrowd them. Thin the fruit, not being in too great a hurry, but taking advantage of the first swelling so as to get a good size in the fruit retained for the crop. Syringe the trees early on fine days, and ventilate early in favourable weather. The temperature may range from 55° to 60° at night, and 60° to 65° by day, ventilating at the latter temperature, and allowing an advance of 5° to 10° from sun heat, closing the house when the heat is decreasing. Avoid cold draughts of air, yet admit it freely in favourable weather, so as to insure sturdy growth, well developed foliage, and thoroughly solidified wood.

Houses Started in February.—The trees are a "sight," in some cases "pictures of beauty," in others the floor is strewn with dropped blossoms, and there is a strange reflection on the face of the cultivator. The flowers in one case are perfect, in the other the pistillate organs are defective, but the staminate are laden with pollen. This is the effect of some cause, and in most cases traceable to a deficiency of phosphorus and sulphur; that means lack of sulphate and phosphate in the soil. Where there is much blossom, all that on the under side or at back of the shoots may be removed. Fertilise the flowers when the pollen is ripe, leaving nothing to chance. Ventilate freely above 55°,

and allow an advance to 65° with sun heat. Maintain the night temperature at 50° to 55°, and the latter by day in dull weather, with a little ventilation constantly, as a close atmosphere, especially damp, causes moisture to be deposited on the organs of fructification, impairing their power of setting the fruit. Secure a genial atmosphere by sprinkling the floor occasionally, and avoid cold currents, but ventilate early and judiciously.

Houses to Afford Fruit in Late July and August.—Midseason varieties are seen at their best in the structures started in March. The trees are coming into blossom, often carrying too many flowers by half, in which case remove those on the under side of the shoots. In other cases there is a strange scarcity of blossom, all the buds having dropped, or nearly so, and this where the trees are grown on the natural system as well as on the orthodox trellis plan. Lifting is the best cure for this, but it only lasts a time, hence some cultivators lift the trees periodically, others without such expedients have plenty of Peaches and Nectarines every year. It is simply a question of soil ingredients, and not one of cultivators. Give such trees phosphate and sulphate of lime with a little iron thrown in, and avoid nitrogen as the pestilence till the stoning is over, as a special application. Maintain a temperature of 50° by day, 40° to 45° at night, advancing to 65° with sun and full ventilation.

Late Houses.—The buds are swelling fast, and in some cases coming into flower. When the blossoms show colour a little heat by day is a great advantage in dull weather, as it allows of a circulation of air, but it ought not to be used to maintain a higher temperature from that source than 50°. Admit a little air constantly, but in some cases the lights fit so badly and the laps of glass are so open as not to need any further ventilation.



* All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Flower Boxes (J. E. D.).—Probably one or other of the large horticultural sundriesmen may stock flower boxes. The addresses of these you will find in the "Horticultural Directory" (1s. 3d.) or from our advertisement pages.

Camellias (*Ignoramus*).—The presence of the glutinous liquid on the leaves indicates that there are insects either on the plants, or some other plants near to them, or on the roof above. You might ascertain if this is not the case, and if it is not you might write to us again enclosing a few of the Camellia leaves.

Book on Making Cricket Green (R. W. Proctor & Sons).—In Messrs. Sutton & Sons' book on lawns, cricket, tennis, and putting lawns are described, but not bowling greens. The price of the book is 2s. 6d. Messrs. Toogood & Sons, Southampton, have a publication (price 2d.) on lawns which gives a great amount of useful information, but we have no idea of any other works on the subject.

Book on Herbaceous and Alpine Plants (T. S.).—Mr. Weathers' new book, entitled "A Practical Guide to Garden Plants," would suit your purpose exceedingly well; the price, however, is 21s. Mr. Robinson's "English Flower Garden" is a few shillings less. Blackwood & Sons publish a "Handbook of Hardy Herbaceous and Alpine Flowers," but the date is 1871, which is somewhat ancient; no price is stated. "Hardy Flowers" (Warne & Co.) would be as good as any, and might cost 5s. or 6s.

Rooting Leggy Nepenthes (A. W.).—The surest way is to notch the stem just below a good leaf on last year's well-ripened wood and on the same side as the leaf, having the upper cut straight across and about half through, then taking the piece out by a slanting cut upward. It is well to operate on two joints consecutively and on opposite sides, then cover the part with sphagnum moss and bind moderately tight with copper wire. By keeping moist the stem will root, when, say in six weeks or thereabouts, detach and transfer to the basket or pot. Cuttings of one-year-old well-ripened shoots, however, root freely, inserting either in sphagnum in a close frame, or, if in pots, in a mixture of two parts fibrous brown peat and one of sphagnum. A good plan is to fill a small pot with moss, invert it, and insert the cutting through the hole in the bottom. The pot then keeps the moss uniform in moisture, plunging in a frame with a bottom heat of 80° to 85°. The pot is broken when the plant is removed.

Hardy Annuals and Herbaceous Plants for Cut Flowers (J. P.).—Perhaps the finest annuals for cutting are Chrysanthemum tricolor, in a large number of varieties; Eschscholtzias, Mignonette, Centaurea Cyanus minor, C. Cyanus cærulea, Sweet Peas, Sweet Sultan. To these you may add some of the many varieties of Candytuft, Collinsia, and Nasturtium. Of half-hardy annuals which you may raise in gentle heat, in pans or boxes, are Phlox Drummondii vars., large flowering Ten Week Stocks, dwarf double Scabious, Asters, and French and African Marigolds. Of herbaceous plants Achillea Ptarmica plena, Alstroemeria aurantiaca, A. chilensis, Anemone japonica, A. j. alba, Anthericum liliastrium major, Aster Amellus majus, A. multiflorus, A. dumosus, Campanula Hendersoni, Chrysanthemum lacustre, Helianthus multiflorus plenus, Centranthus ruber, Verbascum Chaixi, Senecio pulcher, Spiræa filipendula plena, Polygonum orientale, Lychnis chalcædonica, and Scolymus. Phloxes of the paniculata section are best for late summer flowering. Single Dahlias are also good, and Carnations.

Hyacinths Unsatisfactory (Old Reader).—The bulbs have pushed a few short leaves, and the flower spikes just clear or barely of the bulbs. The bulbs were quite sound, and the flower spikes large, and promised to have been very fine, but there were not any roots, hence the loss of these accounts for the non-development. As you say the plants were well rooted when placed in the frame from the plunging material, and after placing in the house the roots were found rotted off, it is quite clear there must have been something causing their destruction. There is nothing in ashes from coal or coke to poison the soil, and consequently cause the destruction of the roots, indeed we have used them for over half a century, and that without any disastrous consequences. There appear traces of root-mite, Rhizoglyphus echinopus, and even on the bulbs at the base, but this pest does not appear, as usual, to exist between the bulb scales, probably having been attracted from them to the young, tender roots, and have passed from these to "fresh fields and pastures new." This root-mite we consider to have caused the destruction of the roots, and that resulted in the non-development of the flower spikes for lack of the essential support. The mites have probably existed on the bulbs, or they may have been present in the soil, and thus infested the roots. We have suffered so much from this parasite that we invariably soak the bulbs in lime water overnight, and also soak the compost for potting or where bulbs are to be planted with it some time in advance of potting or planting, so as to perform these operations with the potting material or soil for planting in good working condition. The results have been satisfactory.

Names of Plants (J. P.).—Jasminum nudiflorum. (L. F.).—1, Scilla bifolia; 2, Acacia Drummondii; 3, Begonia manicata. (A. R. D.).—1, Saxifraga sarmentosa; 2, Cestrum elegans; 3, Spiræa Van Houttei; 4, probably Narcissus princeps, consult a specialist. (Arthur Beggs).—1, Kerria japonica, and the double form; 2, Prunus Amygdalus Davidiana; 3, Iris stylosa. (J. F.).—1, Dendrobium splendidissimum; 2, D. Wardianum; 3, Lycaste Skinneri alba. (J. McC.).—1, Cistus sp. (flowers required for identification); 2, Olearia stellulata; 3, Olearia Haasti; 4, Berberis nepalensis; 5, Veronica parviflora; 6, Phormium tenax variegata.

Next Week's Events.

Tuesday, March 26th.—Royal Horticultural Society's Committees meet in the Drill Hall, Buckingham Gate, S.W. Sussex and Brighton Horticultural Society's Show (two days).

Wednesday, March 27th.—Liverpool Horticultural Society's exhibition.

Trade Catalogues Received.

N. N. Ellison, 3 and 3A, Bull Street, West Bromwich.—*Bulbs and Cacti* (Mr. Haage's agent for United Kingdom).

Frederick Adolph Haage, jun., Erfurt, Germany.—*Catalogue of Choice Cacti, Succulents, and Seeds thereof*.

Stenger & Rotter, Erfurt.—*Catalogue of Seeds for Export, 1901*.

Covent Garden Market.—March 20th.

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz. ...	12	0 to 18	0	Ferns, var., doz. ...	4 0 18 0
Acers, doz. ...	12	0	24 0	" small, 100 ...	10 0 16 0
Aralias, doz. ...	5	0	12 0	Ficus elastica, each ...	1 0 7 6
Araucaria, doz. ...	21	0	30 0	Foliage plants, var., each ...	1 0 to 5 0
Arbor Vitæ, var., doz. ...	6	0	36 0	Genestas, doz. ...	8 0 12 0
Aspidistra, doz. ...	18	0	36 0	Geraniums, scarlet, doz. ...	6 0 10 0
Aspidistra, specimen ...	15	0	20 0	" pink, doz. ...	8 0 10 0
Azaleas, various, each ...	2	6	5 0	Hyacinths, doz. ...	6 0 12 0
Boronias, doz. ...	20	0	24 0	Hydrangeas, white, each ...	2 6 5 0
Cinerarias, doz. ...	6	0	8 0	" pink, doz. ...	18 0 24 0
Crotons, doz. ...	18	0	30 0	Lycopodiums, doz. ...	3 0 6 0
Cyclamen, doz. ...	8	0	10 0	Marguerite Daisy, doz. ...	8 0 10 0
Dracæna, var., doz. ...	12	0	30 0	Mignonette, doz. ...	6 0 9 0
Dracæna, viridis, doz. ...	9	0	18 0	Myrtles, doz. ...	6 0 9 0
Erica, various, doz. ...	8	0	18 0	Palms, in var., each ...	1 0 15 0
Euonymus, var., doz. ...	6	0	18 0	" specimens ...	21 0 63 0
Evergreens, var., doz. ...	4	0	18 0	Roses, doz. ...	6 0 18 0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums, doz.	2	0 to 2	6	Mignonette, English, doz.	6 0 to 9 0
Asparagus, Fern, bunch	1	6	2 6	Mimosas, bnch.	1 0 0 0
Azalca, doz. bnchs. ...	4	0	5 0	Narcissus Ornatus, doz.	3 0 5 0
Camellias, white, doz. ...	1	6	2 0	" Campernelle, ..	1 0 1 6
Carnations, 12 blooms ...	1	6	2 0	" Soliel d'Or ..	1 0 1 6
Cattleyas, doz.... ..	10	0	16 0	Odontoglossums	4 0 5 0
Daffodils, doz. bnchs. ...	2	0	8 0	Primroses, yellow, doz....	1 0 1 6
Eucharis, doz.	2	0	0 0	Roses, Niphetos, white,	
Gardenias, doz.	3	0	0 0	doz.	1 0 3 0
Geranium, scarlet, doz.				" yellow, doz. (Perles)	2 0 4 0
bunches	4	0	5 0	" red, doz.	2 0 3 0
Hyacinths, doz.	4	0	8 0	" Catherine Mermet,	
Lilium lancifolium album	3	0	5 0	doz.	3 0 5 0
" " rubrum	3	0	5 0	Smilax, bunch	3 0 4 0
" longiflorum	3	0	4 0	Spiræa, doz. bnchs.... ..	4 0 6 0
Lilac, white, bunch, ...	3	0	5 0	Stock, white, doz. bnchs.	1 6 2 0
Lily of the Valley, 12 bnchs.	8	0	12 0	Tulips, yellow, doz. bnchs.	6 0 9 0
Maidenhair Fern, dozen				" white	6 0 8 0
bunches	4	0	8 0	" red	4 0 6 0
Marguerites, white, doz.				Violets, single, doz. bnchs.	0 9 1 0
bnchs.	3	0	4 0	" double, doz. bnchs	1 6 2 6
" yellow, doz. bnchs.	2	0	3 0		

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.				
Apples, cooking, bush. ...	5	0 to 7	0	Grapes, black	2	0 to 3	0		
„ Californian, case	8	0	19	0	„ Dutch, lb.	1	6	2	0
Apricots, Cape, box ...	8	0	10	0	Oranges, case	10	0	15	0
Cobnuts, doz. lb., best ...	4	0	5	0	Pears, $\frac{1}{2}$ case	14	0	16	0
Lemons, Messinas, case	9	0	12	0	Pines, St. Michael's, each	2	6	4	6

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	0 to 3	0	Horseradish, bunch... ..	1 2 to 1 6
„ Jerusalem, sieve	1	6	0 0	Leeks, bunch	0 1½ 0 2
Asparagus (Spruce Grass)	0	0	0 8	Lettuce, doz. French ...	1 0 1 4
„ English, 100 ...	4	0	4 6	Mushrooms, forced, lb. ...	0 8 0 9
„ Giant, bundle ...	15	0	20 0	Mustard and Cress, pnnt.	0 2 0 0
„ Spanish, bundle.	1	9	2 0	Onions, Dutch, bag ...	5 0 0 0
„ Paris Green ...	5	0	6 0	„ English, cwt. ...	5 0 0 0
Batavia, doz	2	0	0 0	Parsley, doz. bunchs. ...	2 0 3 0
Beans, French, per lb. ...	1	0	1 2	Potatoes, cwt.	3 0 7 0
„ Jersey, per lb. ...	2	0	0 0	„ New Jersey, lb	0 4 0 5
Beet, red, doz.	0	6	0 0	Radishes, doz	0 9 1 0
Broccoli, bush.	0	0	1 0	Rhubarb, doz.	1 2 1 5
Brussels Sprouts, sieve...	1	0	2 0	Savoys, tally	4 0 5 0
Cabbages, tally	3	0	5 0	Scotch Kale, per bushel...	0 6 1 0
Carrots, doz. bunch...	2	0	3 0	Seakale, best, doz.	12 0 14 0
Cauliflowers, doz.	1	6	3 0	„ 2nd, doz.	6 0 8 0
Celery, bundle	1	0	1 9	Shallots, lb.	0 4 0 0
Chicory, Belgian, lb	0	4	0 0	Spinach, bush.	4 0 5 0
Corn Salad, strike	1	0	1 3	Tomatoes, Canary, case	3 0 4 0
Cucumbers, doz.	3	0	5 0	Turnips, doz.	2 0 3 0
Endive, doz	1	3	2 0	Turnip tops	0 9 1 0
Greens, bush.	1	0	1 6	Watercress, doz	0 6 0 8
Herbs, bunch	0	2	0 0		



Up in Town.

"'Tis a poor heart that never rejoices." "Home-staying youths have ever homely wit." Quite true both sayings, and we are very glad to find so many good men and true have found their way to London during the past three weeks. Some took the first week, others the second, others again the third, and some managed a day or two in all three. What could be the inducement, inducements to catch such different classes? One word solves the mystery, "'Osses." There hardly is an Englishman who does not fancy he knows something about a horse. Some know a good bit, and others are complete sets of walking stud books. We confess ourselves, from predilection and early association, that the third week would appeal most to us; but for all that we could thoroughly enjoy the exhibits of the first, and perhaps in the end the lessons of the first week are the most valuable. To cater for the market one must know what the market asks, and it is not the slightest use (unless we be very big people) to try and strike out a line for ourselves. Judging by the late sales, there is a great demand for fashionably bred Shires; indeed, taking the sales all round, we are very much struck with the high prices obtained. We do not mean two or three sensational hits, but the high averages. Sensational hits are all very well, but the good all-round average tots up better, and speaks of all-round excellence.

Taking the list of entries and exhibitors, we are struck by the wide ground covered. It is an "All-England" business by All-England men. Titled aristocrat and tenant farmer, cheek by jowl, and all very much on their mettle. We are so pleased to see so many instances of the prize going to the breeder who is also the exhibitor. It seems such a thing that one man should take all the risks, and another man all the honours. This first show of the new century has been a big success—first in point of numbers, secondly in point of quality, which is even better. How the society has grown! Twenty-two years ago the Shire horse trade (from a show point of view) was in few hands, and Shire breeding had reached a low ebb.

The country was travelled by sires as full of blemishes as they could be; the difficulty was to find one decently free from hereditary failings, and naturally the rising generation were very moderate. When people began to see there was money in heavy horses a start was made, and now the class of stallion to be found in the country is quite a different thing. The choice is not left so much to individual enterprise, all round there are associations for the purchase or hire of good sires, which are leaving their mark on the young stock.

The show serves several purposes. There you will find types of the best breeding possible; you can see what may be done by men of your own class (whatever that class may be). You can make as good or better investment there as on the Stock Exchange, and if you are lucky enough to have a promising youngster you may turn it into hard cash through the medium of the auction ring or by private sale. We see the stock sold in the ring realised the respectable sum of £19,000, besides which many changed hands outside the ring. How the old names do recur again and again, and how certain types are transmitted along the generations! Some animals are aptly named; for instance—Watercress, by Hydro.

It used only to be in the higher walks of equine life that care was taken in the choice of names, but the Shires will soon have a poet of their own, perhaps another Whyte Melville, who knows? A totally different class are to be found the second week, and, shall we say, a class peculiar to Yorkshire? Certainly so, in the first place. The Shires are more or less cosmopolitan, the best hackneys are from E. Yorks. That there is good money in hackney breeding has been proved again and again; but it is not work for the ordinary farmer. The hackney breeder must, besides knowing how to make a fashionable animal, be, as a Yorkshireman would say, a good foolfinder. That sounds severe, but a wise man can read between the lines and grasp our meaning. The hackney men must be prepared to make great outlay, and in case of "misfits" there will be serious loss. A Shire not fit for the show ring will always find a job on the land, and will always earn his keep, but a "wrong" hackney is less easy to place. Pony breeding, if on the right lines, is a paying game, but we fancy the last eighteen months must have been a bad time for sellers, as their best customers were after Boers, not polo.

We know it affected the hunter trade severely. We heard of "meets" in the crack counties where the proportion was forty women to seven men. Quite a different class of men attend the last week's exhibition, and we see at present no sign of decadence in hunter breeding. Provided a farmer is a good horseman, and lives within reach of hounds, we think he may add considerably to his income by a judicious deal or two. He must make himself a name, and always have good animals "on the shelf," and he will not lack customers. We are told a "real good 'un" is a rarity, but they are to be found, and happily so far they have not been imported, except from Ireland. We import almost everything, but no one yet can beat an Englishman, and for choice a Yorkshireman, in breeding and making a horse fit for the first flight. We say "making," for a horse needs tutoring in manners as well as a child, and "pretty manners" are always at a premium.

We hear many complaints of the dearth of good mares; how fancy prices from the foreigner tempt poor men. This is a pity, and more than a pity. It is all very well, this system of King Premium sires, but they must be mated with sound well made mares.

After all, a good Shire is the safest venture for the tenant farmer; the expense is less, the risk less, and the profit, though not so big, is more certain. There will always be a demand for big smart-stepping horses for the towns, and the town wears them up very fast, and the town is prepared to pay a good price. As we said before, there is no lack now of good sires, and the best are the cheapest in the end.

Work on the Home Farm.

At last we have the weather we longed for. Not much March wind certainly, but glorious sunshine, which has rapidly dried the surface and set horses working in every direction. The land is being broken up for drilling, and the latter process will soon be in full swing. Turnip land which was ploughed before Christmas, and has since been left severely alone, is with the aid of the spring cultivator, providing a capital mould, and Barley will go into a first-rate seed bed. What the land recently eaten off will be like we fear to say at present; it has dried rapidly, and must be ploughed soon if horses can be spared. It

will turn up very rough, and there will be plenty of work for the heavy roll. This implement will also be needed for use on the young Wheat plant, which is looking sickly in many places, and is probably suffering from the attack of wireworms. Rolling is the best thing to check these pests, and it will do good in any case on land of a light nature. After rolling a light harrowing would be beneficial to the Wheat; it will earth it and encourage tillering, will destroy thousands of annual weeds, and in many instances save hoeing. In fact, if land were as clean and well cultivated as it should be, rolling and harrowing would do all the spring cultivation necessary to the Wheat crop. One thing is pretty certain, and that is the well-nigh impossibility of getting men to hoe, even if the crop will pay for it.

Lambing is proceeding satisfactorily, the report still showing a large proportion of twins; the mortality among ewes, however, is strangely various, and that it is traceable to previous rather than present causes is shown by the case of a neighbouring farmer who recently purchased a number of ewes in lamb. These, attended to by the same man, eating the same food, and occupying the same field and yard, are lambing with most happy results and no loss, whereas the ewes which were already on the farm, though producing a good crop of lambs, are being decimated by death. The owner confesses that these ewes have had more roots than they should have had if Turnips had not been so plentiful. Ewes and lambs will do harm on young seeds now the nights are frosty, and they must be kept on grass as long as possible. Swedes might be cut up and given to them in troughs on the grass rather than waste them elsewhere.

Sugar Beet.

Mr. Sigmund Stein of Liverpool, so well known for the great interest he takes in the cultivation of Sugar Beet, has made an analysis of the roots grown at Newnham, and the result is given in the following statement, with a comparative analysis of German roots, by Mr. F. O. Licht of Magdeburg.

323, Vauxhall Road, Liverpool,
October 27th, 1900.

CERTIFICATE OF ANALYSIS OF SUGAR BEET ROOTS, grown by the
Right Hon. the EARL OF DENBIGH, at Newnham Paddox,
in the county of Warwick.

Vegetation, 165 days. Manure used: ten loads farmyard manure, 5 cwt. dissolved bones, 2 cwt. nitrate of soda. Soil: heavy loam, clay subsoil. Previous crop: Wheat. Nos. 1, 2, 3, 4, 5 grown on the garden close No. 372, Newnham Home Farm.

	SEED FROM					
	1	2	3	4	5	
	Aderstedt.	Brenstedt.	Mette Vilmarin.	Vilmarin Elite.	Klein Wanzleben.	Compared with F.O. Licht, Magdeburg, analysed 10 Oct., 1900.
Average weight of roots with leaves in grammes ...	1764	1681	1423	1642	2010	1072
Average weight of roots without leaves in grammes ...	913	947	841	750	815	616
Degrees Brix (dry matter) ...	20.10	21.20	19.60	20.40	21.30	20.70
Specific gravity ...	1.084	1.089	1.081	1.085	1.089	1.0864
Quantity of sugar in 100 parts of the juice ...	17.70	18.70	17.20	18.10	18.70	18.04
Quantity of non-sugar in 100 parts of the juice ...	2.40	2.50	2.40	2.30	2.60	2.66
Quotient of purity ...	88.06	88.20	87.75	88.72	87.79	87.15
Quotient of sugar in 100 parts of the roots ...	16.00	17.10	16.10	17.00	16.90	
Shape of roots ...	All well shaped roots.					

Remarks.—These well shaped roots show a very satisfactory result. The weight exceeds by far the German weight. Saccharine contents and quotient of purity is as well more favourable than in German grown roots. There was no trace of invert sugar in these roots. I consider these roots as very good specimens for manufacturing purposes.

(Signed) SIGMUND STEIN.

In considering the above analysis, it must be remembered that the quantity of sugar in 100 parts of the juice and the quotient of purity are the two most important points, and though the quantity of sugar in the juice of the roots grown at Newnham is in two cases less than the quantity in the Magdeburg roots, yet the average of the Newnham roots is more than for those grown in Germany, and in regard to quotient of purity the Newnham roots are in every case above the German. It is difficult to exactly estimate the value of Sugar Beet for the manufacture of sugar, but it may be safely assumed that those grown at Newnham would be worth more than 25s. a ton, so that it is quite certain Sugar Beet could be grown in England at a profit to the farmer if there were factories at a convenient distance. There is one matter that should be noticed in connection with the analysis of Mr. Sigmund Stein, as when he gives the average weight of the roots it must be understood this is for the roots sent for analysis, and not for the entire crop.

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Journal of Horticulture.

THURSDAY, MARCH 28, 1901.

Points of Difference.



THAT doctors disagree is a well-known fact, and so do gardeners, equally as much, if not more. Perhaps one of the most puzzling things to a novice in horticultural

matters is the contradictory character of the opinions of practical men over the culture of certain plants and crops. It is misleading to get the views of one expert, and then when you go to another for corroborative evidence, to hear him propound a different theory altogether. I say a different one, but perhaps it is only seemingly so, and if the matter comes to be thoroughly probed it will probably turn out that the principle is the same in both cases, and the difference only in the mode of application. The pages of the *Journal of Horticulture* have been the medium of many a long and lively controversy on different subjects, and though to the uninitiated mind they may be puzzling and misleading, to the practical man they are both interesting and instructive.

Very often when these discussions are ended and the arguments on either side are carefully weighed, it turns out that there is something to say for both, and it is parallel to the case of the two men who arrived simultaneously at the same point, but one took the road way and the other went across the fields. Every man who has proved the correctness of a theory by his own practice has a right to express his opinion and to act upon it, but conditions vary so considerably that it is not wise of him to assert that his method is the only right one and every other is wrong. There is only one school where a gardener can learn the best methods, and it is in that of experience. Diversity of opinion is so common among gardeners that after a man has been told that this, that, or the other system is the best, he has to prove the thing for himself by putting it to the test.

Young gardeners as they move from place to place during years of probationship have ample

During FIFTY-TWO YEARS the "JOURNAL OF HORTICULTURE" has been written by Gardeners for Gardeners, and in its principles, its practice, and its price it still remains the same. One alteration is perhaps, however, necessary. Our modern methods of production have rendered the price old-fashioned, and hence in order to meet the wishes of the present generation of Gardeners the "JOURNAL OF HORTICULTURE" will hereafter be sold for **TWOPENCE** instead of Threepence.

opportunities of observing how the methods of their various chiefs differ, and if of an observant turn of mind they may put the experience to good account by noting which method ends in the best results. I have a word here for the heads. Do not criticise the ways of another gardener to the young journeyman who is anxious to learn. Remember that if the other man is successful by the methods he adopts his opinions are as valuable as yours. I recollect an instance of a head gardener who was instructing a subordinate as to the way in which he was to perform a certain operation. The young man observed that Mr. So-and-so, whom he had been under previously, used to have it done in another manner, and he got this sensible reply—"When you were with Mr. So-and-so you did it in his way, now you are with me you will do it in my way. Learn which is the best of the two, and when you are a head gardener have it done as you like." Was not that better than attempting to shake the faith of the young man in his former chief?

Even in the most elementary operations opinions differ, and I suppose they always will. It is yet an open question how best to treat the ground for the growing of vegetable crops. Most gardeners are agreed as to the law of deep cultivation, but they are decidedly at loggerheads as to the best ways of working the few feet of soil next to the surface. One expert grower believes in trenching anything and every thing, bringing up the subsoil and burying the top spit, in order to turn the whole into one even state of fertility. You look at the examples he produces by the practice of this theory, and decide at once that it is the best way. Then you interview another crack vegetable man who gets results equally as good, but does not believe in trenching in the same way. No amount of persuasion would ever induce him to bring the subsoil to the surface, and he argues (with a big reputation to back him up) that so long as the lower spit of soil is worked where it is, and well manured, it can be made as good as if it were brought to the top, while the most is got out of the best soil by allowing it to remain where it is. Grower number three, also a champion, does not agree with either of them, though at the same time he agrees with both. He is not averse to bringing up the subsoil, but not all at once. A little at a time is his method, and the revolutionary operation lasts over a period of years. Results prove that neither system is wrong, but which is the best for his own case every gardener has to prove for himself.

We must manure, everybody is agreed about that, but what to use, and the best way of applying it, are matters of open controversy. The disciple of the dung barrow sticks to the prop of his grandfather in the shape of the material from the farmyard, and will not be convinced that concentrated fertilisers are of any good. It these men hear of failures they put it down to that "patent stuff" used, but never take the trouble to study the simplest rudiments of chemistry. The champion of artificials, on the other hand, is sometimes disposed to underrate the value of the material that has stood the test of ages. Experiments do not prove much, for the results differ widely, according to the conditions of soil and weather. While the haggling goes on the wise man, who has no particular prejudice either way, observes that there is something to be said for both sides, and if he combines forces by using farmyard manure and concentrated fertilisers in a proper manner, invariably gets the best results.

One champion Onion grower believes in deeply cultivating and manuring liberally for the crop, but he has no faith in top-dressing, feeding, or watering after the plants are established; in fact, he names the evils that are the result of this procedure, and brings living proofs to substantiate his remarks. One story stands good till another is told, and Onion champion No. 2 laughs the non-feeding theory to scorn. He takes the greatest delight in showing how much the Onion may be improved in size and quality through stimulating it during the growing period; and in front of such conflicting evidence it is not to be wondered that the novice, who has visions of 2 lb. bulbs before him, is at a loss how to proceed. Shall I give him a hint? Compare how far the two experts are agreed, and be quite sure that the points where they differ are not of vital importance.

These points of difference not only occur amongst vegetables, but fruit and flowers. In fact, there is hardly a gardening operation, even to the crocking of a flower pot, on which there are not shades of opinion. One man produces splendid Cyclamens by keeping the plants growing all the year round, and is the champion of his method. Another grows the same flower equally as well, but follows the orthodox plan of resting the corms over a certain period. Which is right? Results say both.

The grower of Grapes is a stickler for his own theories, and perhaps no fruit has a greater fascination for gardeners. Hardly any two successful growers follow exactly the same methods, and of course

everyone supports his own views. The result is that much advice of an apparently diversified character is given on the culture of this important crop, and every exponent, of course, puts forth his views in the firm belief that they are correct. They may be, of course, and so may those of somebody else, with just the difference in the way they are put into practice.

We may argue and wrangle about these matters, and good is often brought to light by doing so in a friendly and reasonable manner, but after all the best method for each grower to practise is that which gives the most satisfactory result in his own particular case. The lesson is learnt by observation and experience, with willingness and aptitude for observing the strong points in the arguments of those who hold contrary views.—G. H.

The Value of Botany in the Garden.

WHY gardeners, as a rule, do not attach more value to the knowledge of botany, in its relation to their everyday work in the garden, says T. H. Smith, of Kidderminster, is a problem not yet solved, although it has frequently been the subject of controversy in the various horticultural periodicals. The doctor's medical practice and the study of chemistry, although closely related, are often found quite separable from each other; and so it may be with regard to gardening and botany.

The science of botany and the art of gardening are not often found associated. A clever botanist may be quite unable to go through the rudest elements of gardening in a respectable manner, and a first grade gardener may be quite ignorant of the distinction between an Umbelliferous and a Composite flower. But the value and use of botany to the practical gardener is of more value than the practical knowledge of gardening to the botanist. It is of great importance to the gardener that he should have a knowledge of the principles of botany. The botanist is interested in the numbers of stamens, the distinctive characteristics of corolla and calyx, the structure of the ovary, and the relation of pollen to stigma, &c. The problems the gardener has to deal with are of a different nature. He has to learn by experience how much food, light, moisture, and air are required by certain classes of plants when brought into cultivation. What part of the plant has to be converted into use, whether for commercial or domestic purposes? and what regions of the earth the plants inhabit? are other questions a gardener has to be capable of answering correctly if he is to succeed in the cultivation of his plants. As a mother stands in relation to her family, so does the gardener stand to his plants. Individualities vary greatly in plant life, and the gardener can only expect to be successful in so far as he is capable of anticipating and providing for the needs of each of his dependents.

The gardener who is ignorant of botany loses a great deal of the interest and delight to be found in the everyday work of his calling. The wonderful truths connected with the fertilisation of plants and the constant variation going on in all the different parts of a flower are all enigmas to him, although to be conversant with these wonderful changes and results in plant development and reproduction as items of botanical science would be helpful to him in arriving at successful results. What are the laws of plant-life as relates to food, drink, chemical properties, duration, and development? are questions of the greatest importance to every gardener. In order to apply the right class of manure, the cultivator must know something of the constitution of a plant. A living plant feeds, breathes, grows, develops, multiplies, decays, and ultimately dies. In order to carry on these various operations, it must naturally spend, accumulate, and change. Generally more than one of the above operations are going on at the same time, and the action of one is modified by and influenced by that of another. Under certain conditions these operations are favoured, and by others hindered. The gardener is concerned with all these changes and conditions, so that it may be fairly assumed that it is indispensable to him to realise what is the work which a plant does and how it does it. The beautiful structure of the minute pollen grains, which form the fertilising bodies of all flowers, is known to very few. Nature's operations and agencies in this respect are much higher than those of man. Some of his fairest creations are seen to be rough and unfinished when highly magnified; but, if we magnify the pollen grains of various types of plants, we find that with added power there is greater charm; and irregular structures, when brought under microscopical investigation, are found to be of the most beautiful internal finish. To know that every grain in every flower consists of a cell and two nuclei, one vegetative and the other reproductive, and with every one of them lies the potencies of the entire species, strikes the reflective observer as extraordinary and amazing. What sources of delight and springs of utility must these additions of botanical knowledge be to the gardener, whose life is mixed up with the cultivation and perfection of plant-life, and why so many practical cultivators should neglect this advanced stage of their profession is utterly perplexing.



Cypripedium Lord Derby (Sanders' variety).

NEARLY every meeting of the Orchid Committee of the Royal Horticultural Society sees improved or varying forms of certain species of hybrid Orchids staged for opinion or award. At the Drill Hall meeting on the 12th of the month Messrs. F. Sander & Co. of St. Albans brought forward their form of *Cypripedium Lord Derby*. The flower, as our illustration shows, is a very imposing one, the long, green, brown spotted petals adding greatly to its prepossessing character. The bold dorsal sepal is also green, and covered with bands and spots of rich purple, while the labellum is chocolate brown. Messrs. Sanders' plant bore a three-flowered raceme. For parentage *C. Lord Derby* has those two well-known favourites, *C. Rothschildianum* (female), and *C. superbiens* (male), the latter species being one whose qualities have been frequently employed in hybridising and crossing. The handsome *C. Rothschildianum* has not so often been employed, but its influence has been for good in this case. The Orchid Committee awarded a first-class certificate to the variety under note.

The Botanical Gardens,
Edgbaston.

WHEN recently passing through one of the Orchid houses in this popular midland botanical resort, we noticed amongst the more conspicuous several fine specimens in full bloom of the elegant and chaste *Cœlogyne cristata* and *C. c. alba*, a pleasing contrast being afforded by the totally pure white colour of the latter, and the bright rich lemon-coloured lip of the former.

Another striking and beautiful species of this genus was a small specimen of *Cœlogyne Massangeana*. This had one pendulous raceme about 18 inches long, the flowers having rich cream-coloured petals and sepals and brownish throat, than which nothing of the kind can be more elegant. Another quality of this plant is its lengthened period of flowering, as attested by Mr. Deedman, the grower in charge of the indoor plant department. Several plants of the stately *Phaius hybridum* (*Wallichii* × *grandiflorum*) were very effectively disposed among ornamental foliage and other plants in the show house; and in close association were such as *Cymbidium eburneum*, *Odontoglossum crispum*, *Angraecum citratum*, with its pale citron yellow flowers, as the specific name implies; *Cochlidium vulcanica*, and *Odontoglossum Rossii majus*, with its white, brown, and yellow spotted flowers. Amongst other Orchids several species and garden hybrids of *Cypripediums* (*Paphiopediums*) were observed, particularly several specimens growing in wooden baskets, suspended from the rafters of the house, of the distinct and bold-flowered *C. Lathamianum* (*Spicerianum* × *villosum*), a distinctive feature being the long and dependent radical flower scapes, thus lending an elegance to the contour of the plant not excelled by any of the genus. Its specific name was appended in honour of the raiser, Mr.

W. B. Latham, the curator here. Two or three plants of the newer hybrid *C. Deedmanianum*, and which is sufficiently distinct to be well worthy of extended cultivation, also merited attention. Other *Cypripeds* noted were *C. Statteriana*, *C. nitens*, *C. villosum*, and *C. caricinum*, more or less nicely in flower. A peep into the Orchid stove disclosed numerous seedlings of *Cypripediums* in various stages of growth, and a few of which, showing for bloom, are of course regarded with special interest as to developments, especially one with large, robust, and richly spotted leaves, which alone renders it an ornamental plant, the appearance of its embryo inflorescence had long been patiently and anxiously watched for, and is now increased with the approaching expansion of the flower.—W. G.

Laelia Jongheana.

This fine plant has been rather freely exhibited of late (see R.H.S. Orchid Committee's report), and has quite taken its place as one of the best of spring flowering Orchids. For many years after its introduction in 1854 it was almost unknown, and although some twenty years later it again came under notice, it never was introduced in quantity, and remained a very rare species until quite recently. But some two years ago Messrs. Sanders' collectors sent home some thousands of plants of what was considered to be *Laelia pumila* of a distinct form; these eventually turned out to be the long lost *L. Jongheana*.

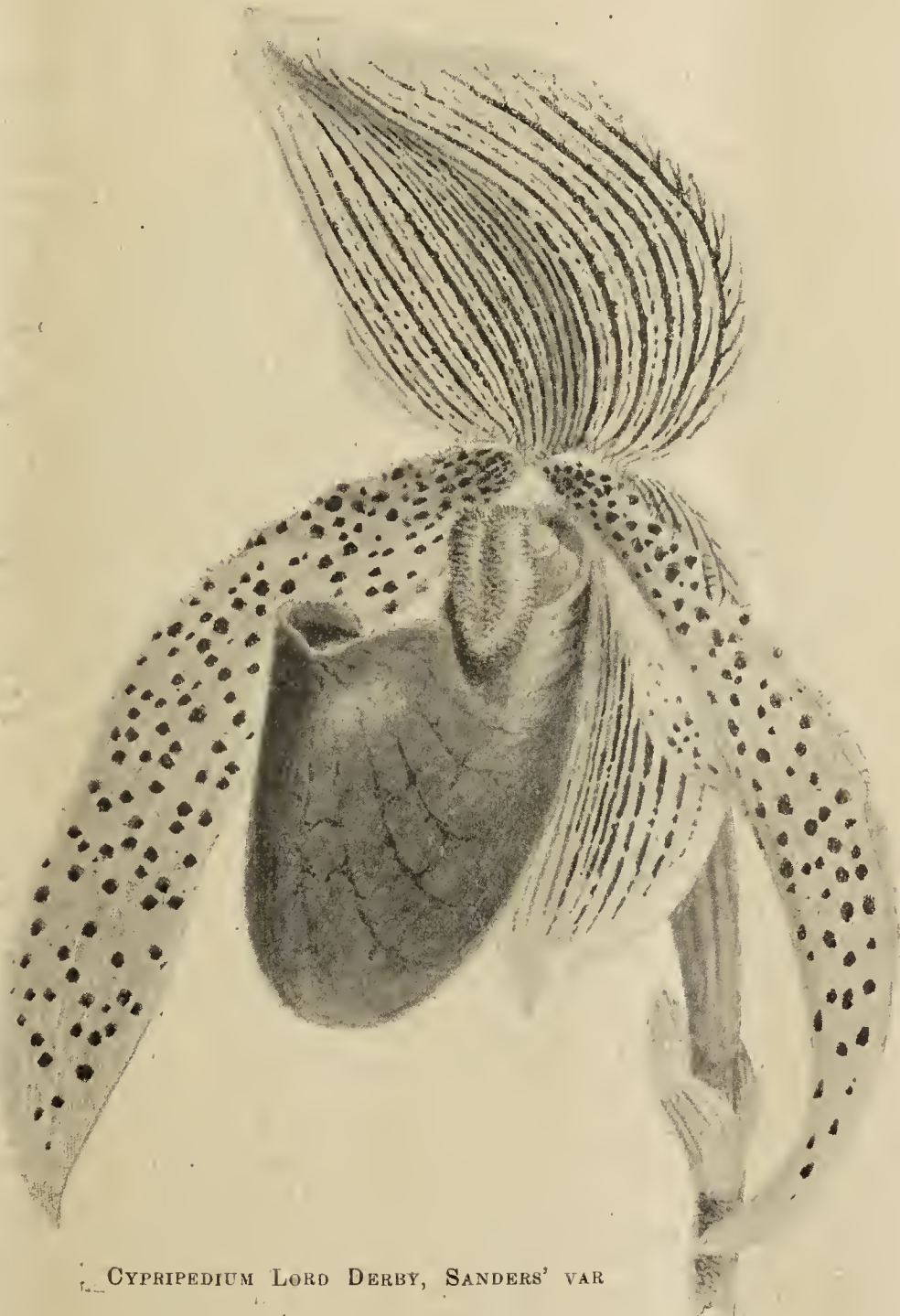
It is undoubtedly a very beautiful plant, the flattish well displayed blossoms being a soft rosy purple with a yellowish area in the throat, and a white blotch on the lip. The pseudo-bulbs are roundish, each about a couple of inches high, and bearing an erect, stiff leaf, from the base of which the flower spike issues. It has been found under cultivation to do best in rather a thin compost, the plants being kept well up to the light. Fortunately the growth is made during the summer months, and the resting season corresponds with our winter. *L. Jongheana* is named after M. de Jonghe of Brussels, to whom it was sent by poor M. Libon, being one of the last plants discovered by this energetic but ill-fated collector.

Chysis Chelsoni.

[The genus *Chysis* is a very limited one in point of numbers, the popular *C. bractescens* being the best known of them all. *C. Chelsoni* is

a hybrid between this and *C. lævis*, raised many years ago by Mr. John Seden, at the nurseries of Messrs. Veitch & Sons, Ltd., of Chelsea. It is slightly larger in growth than *C. bractescens*, and the flowers are produced on arching racemes from the centre of the new growth. The sepals and petals are pale yellow, with a reddish-brown blotch at the lip of each. The lip is pale yellow at the base, white at the front, where it is tinged with yellow and spotted with red.

C. Chelsoni does well in an intermediate temperature, and should be potted or basketed in equal portions of peat loam fibre and sphagnum moss, sufficient crocks and charcoal being added to keep the whole porous. Drainage must be carefully seen to, as few Orchids like more moisture at the roots when growing freely. It likes moisture in the air too, but it is very essential that no water finds its way into the centre of the young growth, as this decays rapidly. In winter after thoroughly ripening the young growths, and when the foliage has fallen, dry the plants off gradually, and repot if necessary, just as the growth is on the move in spring.



CYPRIPEDIUM LORD DERBY, SANDERS' VAR

Hardy Flowers in Spring.

When Spring comes laughing
By vale and hill,
By Windflower walking
And Daffodil.—*Austin Dobson.*

It is with joy that we see at length the tokens that spring has truly come, and that we have now entered upon the full enjoyment of our flowers, though, even now, we may yet have some tale of disaster to tell. The long winter seems gone, and flowers come thickly and fast to brighten the garden and to rejoice our hearts. The Lenten Roses are in perfection, and one can do little but admire the beautiful colouring and form of some of the newest and best seedling varieties. In one's own garden there are some good flowers, but a boxful from sunny Devonshire, from the garden of a noted flower lover, make one almost envy their happy possessor the charms of his thousands of plants which bear such flowers, which range in colour from white, pure and unspotted, or charmingly marked with coloured spots, to delicate blush flowers, and thence to deep purple, and in one case a slaty black. I do not think that the new varieties of *Helleborus orientalis* are as yet properly known to the ordinary lover of hardy flowers. This plant, like many more, has been much improved of late, and named varieties reckoned perfect a few years ago are now fast falling into the background. No longer can we think that the name of "Lenten Rose" is almost a slur upon the queen of flowers. So delicate are some of these new tints, and so beautiful the flowers, that they really remind one of some of our charming single Roses which are brought to us by the midsummer days which are yet to come. Not yet have we lost the Crocus, whose "triple tongue of flame" still emerges from the glowing cup of beautiful colouring which surrounds it. Many of the species have left us for the year, but still there shine the flowers of *tomassinianus*, *reticulatus*, *Alexandri*, *Balansæ*, *etruscus*, late forms of *Imperati*, and many forms of *vernus*, besides the Dutch Crocuses and several other species. Of *vernus* some varieties have not yet opened, so that one hopes to have flowers of a favourite plant for some time to come.

Then the flowers of the Scillas have been with us for a while, and daily new blooms open among the many groups in the garden. *S. bifolia* is here in blue, white, flesh-coloured, and pink varieties. All are beautiful, and the several varieties are not yet widely enough grown. They come so early and look so pretty that they may claim a wider constituency and more extended appreciation in our gardens. Beside these the varieties of the more popular varieties of *Scilla siberica* look heavy and ungainly, though so fine in other respects that we must condone their faults of this kind and admire their habit and their colouring. There are a few shades to be found in the blue or typical coloured flowers, but the white variety is a charming thing, which is now so wonderfully cheap that it ought to be more frequently seen. Mr. Allen's *marginata*, with blue and white flowers, is not yet in commerce. It is so distinct that one expects that it will find for itself an entrance into many gardens when it is offered for sale. Unfortunately it is not quite constant in its colouring, and occasional flowers are almost self-blue for one season. The Glory of the Snow has no snow about it to remind us of the sight seen by Mr. George Maw when he first saw it on its native heights. Yet we can appreciate it, though it has only for a foil the dark earth of the border or, for a setting, the green of the lawn or the grassy slope. The greater number of the forms are here, and one admires them all, though the little flowers of *Chionodoxa nana* look insignificant when they come—and that is yet in the future—beside those of *gigantea*, *Luciliæ*, or even *sardensis*. When the pink and the white varieties become plentiful enough to plant by the score we shall have early spring gardens with greater delights than we have even now. The *Chionoscillas*, too, have begun to appear again, and give us the pleasure of additional variety.

For a time we have had the pretty flowers of *Hyacinthus azureus*, and now the *Muscari* begin to send up those clustered heads which resemble it so much. Perhaps the earliest here is *Muscari Heldreichi*, which is very beautiful, with its blue flowers so prettily margined with white. It wants, however, a somewhat stronger soil than it has in my garden, and I cannot grow it to the same perfection as in those with a heavier compost. What a tangle the names of these Grape Hyacinths present! Nor is it easy to prevent this. To compare them properly they need to be grown together, and then they seed among each other, so that in a few years the confusion is worse confounded. Some few, however, are distinct enough to pick out without any trouble, and *M. Heldreichi* is of these.

We ever welcome the Daffodil with its trumpets or cups of gold or silver. As the spring time comes round we look eagerly for the opening of its flowers. The first of the year was, as usual, *minimus*,

and it, again, was succeeded by the earliest varieties of *pallidus præcox*, the unique cyclamineus major coming next to take up the tale of beauty. Then came *Fenzi Irene*, with its double or triple-headed stems, and showing the union of the trumpets and the Tazettas. A few more are open, and we shall soon be in the Elysian fields. Anemones have come, too, and we delight in *blanda*, a few *fulgens* varieties, and a few plants of early habit of *coronaria*. *A. apennina* will soon be here. There are yellow and white, and crimson and purple, and pale pink Primroses; there are a few early Saxifrages, late Snowdrops, *Adonis amurensis*, *Rhododendron præcox*, plenty of Spring Snowflakes, early Irises of the *reticulata* group, resplendent in blue and gold. Early Heaths, double Wallflowers, and a few others have come to "take the winds of March with beauty," and to proclaim the truth that even in our northern land the garden may give its rewards and joys to those who love it.—S. ARNOTT.

Coniferae.

(Continued from page 212.)

Pinus austriaca is similar to the last named, and is said to be a variety of it. It was introduced into this country in 1835, but the Corsican Pine was introduced in 1759 under the name of *Pinus sylvestris maritima*. The leaves are a much darker green than *P. laricio*, and is sometimes named the Black Pine of Austria. It is perfectly hardy, and one of the best trees of its class for planting in exposed situations and for forming a screen to more tender plants. It is much used in this district in villa gardens. Like many of the Pines it is not good to transplant, as it makes small roots in proportion to top growth, and they are bare and straggly. They should be frequently transplanted, until they are planted in permanent positions.

Pinus Pinaster, the Cluster or Star Pine, so named because the cones are generally produced in groups which point outward in a star-like form. I do not know much about this species, and do not think it is much grown in this country, except within the influence of the sea, where all varieties of it are said to grow better than most plants. The wood is soft and soon decays, but the resinous products, however, are of great value. I have not been successful in growing young plants of this Pine in ordinary garden soil. A few years since I planted fifty; they all died but four the first season, and these four only survived a year.

Another Pine that I have not succeeded in getting to grow is *Pinus pinea*, the Stone Pine. It is rather a tender species, and often killed during our sharp winters, and for this reason is not very common. It is often supplied by nurserymen in pots. I have planted out this Pine, but they have always died. It is a favourite tree in warm countries, and much thought of by landscape painters. In Italy, Spain, and Greece, where the tree is common, the seeds are used for food, both by the poor and rich. They are said to be as sweet as Almonds, but partake slightly of a turpentine flavour.

The Weymouth, or white Pine (*Pinus Strobus*) began to be cultivated in England in the beginning of the eighteenth century, and having been planted in large numbers by Lord Weymouth on his estate in Wiltshire, and having grown vigorously, it was called the Weymouth Pine. It has a different appearance to most of the Pines; the leaves are slender and of a bluish green colour, which gives the tree a soft and delicate appearance. This Pine has the needles or leaves in bundles of five. It is not extensively planted in this country, but is sometimes used for forming belts and screens; it grows much slower, however, than other Pines that are used for this purpose. Its appearance is quite distinct from other Pines, and may be grown for ornamental purposes, either in the park or pleasure grounds. *Pinus Strobus* is one of the most important of the American timber trees, and is known as white Pine. The wood is soft, free from knots, easily wrought, and very durable when exposed to the air and sun. It is largely imported into this country, where it is much used in domestic architecture. The tree does not grow so freely in its young state as many of the Pines; in light soil I have found that many of the trees turn a sickly yellow, and eventually die. There is a dwarf variety, *nana*, which grows to the height of from 5 to 10 feet.

No more beautiful Pine than *Pinus insignis* is grown, but it is ill suited for our inclement winter and spring. It grows well in Ireland and at many stations in England. I have seen good specimens in the south, but do not think it will thrive very well in the north. This spring I saw a few young trees that had been greatly injured by the hard winter. The popular name of this species is "the Remarkable Pine," which was selected by Douglas, who introduced it in 1833. The leaves are slender, thread like, and soft, and often twisted like those of the Corsican Pine.—PINUS.

Hanging Gardens.

ANCIENT Babylon has furnished us with many a theme for research and enthusiasm, but none perhaps more attractive than the wonderful horticultural arrangements which were practised in those dim and distant times of the days that are no more, in this long lost city. Could we transport ourselves across the vista of years to that era of the mighty Nebuchadnezzar, what should we find? At that time Babylon possessed what has been ever since recognised as one of the seven wonders of the world. In modern times the United States profess, as in most things, to break the record with the tremendous heights attained by their buildings. Thus in New York there may be seen houses numbering any amount of stories up to twenty-five and even thirty. Though they had nothing approaching to this in ancient times, yet many are probably unaware that in Babylon itself three, and even four-storied houses, were tolerably common, while in Tyre and Rome the same system was also much in vogue.

But the particular reason for the extraordinary erection in the city under notice was as follows. King Nebuchadnezzar had married a wife from the Medes. It was necessary for political reasons to keep on good terms with these same people. Accordingly, to please his Median princess, who amongst the vast streets of this great city yearned for the natural hills, flowers, and trees of her native land, the king conceived the project, and caused to be carried out the work, of piling up a huge structure, half masonry and mortar, and half earth, in the very midst of the metropolis, thus causing a magnificent semi-natural lung and pleasure resort *in medias res*. For Babylon was at that time the very Chicago of the period, an exceedingly busy town wrapt up in the industries and pursuits of the age, of vast population, and covering a considerable area of ground. Its configuration was exceedingly flat, and there was no park or open spot in its centre. Accordingly economy of space was a main object, and to effect what was desired the horticultural effort had to be spread out upwards towards the heavens. So daring a project was nevertheless consummated and crowned with the utmost success, and its renown has been handed down throughout the ages for all time.

Erected close to the banks of the Euphrates, which flowed through the city, this enormous pile was divided into four terraces, each 100 feet in width, which rose by steps of 20 feet, the vaulted passages which ran underneath being supported by piers of masonry. Upon these were placed massive blocks of stone, and with cement and sheet lead to prevent the moisture oozing through, the whole being filled with rich loam, in which were planted all the trees, flowers and other growths available to those times, and embracing the rarest shrubs and blooms to give forth their colour and perfume to the sight and senses. In due time, moreover, the saplings, thus introduced into their airy bed, struck in, and increasing in girth and stature become full-grown trees of considerable size and vigour. To further beautify the gardens, to refresh the eye, and to aid the luxuriance of the vegetation, water from the Euphrates hard by below was obtained by means of a shaft, and laid on to sparkling fountains and seductive rills; while beneath these beautiful terraces in the vaulted passages below would be congregated the money changers and others pursuing their various callings amongst the passers-by. Beheld at a distance, so that the whole of the marvel might be taken in at one glance, the sight was not only a very superb one, with its varied appearance of every size, colour, and form in vegetation, including lovely creepers trailing about over parapets and walls, but also a peculiarly striking coup d'œil, and

from all accounts, and every point of view, must be considered to have been a perfect masterpiece of art.

In mediæval and modern times there are many fair towns which have more or less in common with the hanging gardens of Babylon of old. With this important difference, however. In the former case Nature lent no aid to the undertaking; all was done by the energy and work of men's hands; while in the latter, from the very configuration of the ground, the disposition and laying out became an easy and natural one in itself. Thus Genoa presents a very fine appearance, especially on approaching it from the sea. Here the rich luxuriance of the garden plots, bright with gay flowers on terrace walks, mingling with the stately white marble palaces, affords the most striking feature of the place itself; while approached more in detail, the cool open patios within the building, often containing statuettes and fountains, are exceedingly delightful to the eye. Algiers, too, on the further shore of the Mediterranean, presents a like prospect. Built and disposed all about the slopes of the mountain, of much similar gradient and contour to Genoa, Nature again largely aids in creating in spots of such a character pleasure-

grounds and gardens. At all heights and positions may be traced levels deftly excavated or built up to form tiers or terraces, whereon appear the gorgeous wealth of the semi-tropical climate. Superb Roses, especially Tea, all the winter through; the beautiful feathery yellow Mimosa, Anemones of varied colours, Geraniums, and a host of other flowers, vie with the numerous flowering shrubs, Bananas, Pine Apples, Orange and Lemons, all being largely represented and adding their charms of ornament or use to the beauties of the villas of which they form a part. Perhaps more striking still is the blaze of creepers trailing in all directions over arches and against walls, the queen among which must surely be the exquisite purple Bougainvillea.

As viewed from the ocean, the landscape of this wondrous Mohammedan and Moorish town is a very remarkable one, the intense dazzling whiteness of the villas and domes and minarets of the mosques standing out in striking relief against the abundant luxuriance of verdure and foliage growing naturally or artificially all around, and embowering them here and there along the hill sides. Naples in parts may be said to possess some effective hanging gardens, but in this respect can hardly compare with the other places treated of, nor indeed with yet another beauty spot in a very different quarter of the world, the magnifi-

cent and unrivalled Peak of Hong-Kong, in the Far East. Here, indeed, you will find rare exotic blooms and Palms in bewildering variety in all their tropic grandeur. From the very ground floor, as it were, directly you leave the crowded and cosmopolitan streets, as you commence your ascent up this perpendicular mountain, you cannot fail to be impressed by the wonderful gardens, so happily built up and arranged to accommodate themselves to their peculiar circumstances. Perhaps Azuleas among larger growths and Orchids among smaller ones are as much in evidence as anything, the latter, of course, of every colour and form, though they hardly come up to the more fertile and luxuriant specimens found in the indigenous soil around the full tropic region of Singapore.—J. A. CARNEGIE-CHEALES.



MISS ORMEROD, LL.D., V.M.H., ETC.

(See note on page 260.)

Profit in Forced Rhubarb.—On January 30th Mr. Michels, a Detroit (Mich.) gardener, picked and marketed 176 dozen Rhubarb at 2s. 1d. per dozen, or 86 dols. for the load. This was taken at one picking from a dark cellar constructed of old planks, boards, and coarse manure. The cellar is still good for three or four more pickings. This makes pretty good business for these cold days.



Earthy Potatoes.

FOR some two or three years past my Potatoes, whether from the garden or the field, have had a most unpleasant, strong, earthy smell and taste, and are almost uneatable. The sorts are mostly Up-to-Date and Snowdrop, and there is nothing unusual about the manuring or the cultivation. Can any of your readers give me any idea of the cause, or suggest a remedy? I at first thought the fault might be in the cooking or dirty saucepans, but can find nothing wrong there; moreover, uncooked specimen cut through has the same disagreeable smell.—SUBSCRIBER.

Cinerarias at Impney.

THERE is a house full of Cinerarias now at Impney, and the plants are almost in the height of bloom. The collection is remarkable for richness of colour, size and symmetry of flowers, and sturdiness of plants. Such a high standard of quality is seldom seen.

I was pleased to see another old and handsome friend at Impney—namely, the Schizanthus, in flower. It is a charming annual, and so easy of culture. With a mixture of *S. oculatus*, *S. Grahmi*, *S. papilionaceus*, and *S. retusus*, we have a richness and variety of tint which must be seen to be fully realised. Mr. Corbett derives so much pleasure from the floral treats continuously provided by his gardener (Mr. Jordan), that he annually provides better means for their production.—J. UDALE.

Stable Manure versus Artificial.

I AM surprised that your correspondent, "W. D., Herts" (page 135), does not see that the facts he mentions makes my case stronger—namely, that stable manure is less quick in its action than artificial fertilisers. The very fact that in the experiment referred to, the Potatoes were not planted until so late in the season as June 10.13, shows that, notwithstanding the short period of growth, the artificials were able to produce a much larger crop of tubers than the farmyard manure, although the 14 tons of dung supplied about 200 lbs. per acre of nitrogen against only 86 lbs. by the artificials.

I now give the total produce of Potatoes from each of the ten plots in the first year of the experiment (1876), and also the average produce for the first five years (1876-80), grown at Rothamstead.

Plots.	MANURES PER ACRE EACH YEAR.	1876	AVERAGE
		cwts.	OF 5 YEARS
1. Without manure	...	77½	46½
2. Farmyard manure, 14 tons	...	85½	93½
3. Farmyard manure and superphosphate	...	106½	106½
4. Farmyard manure, superphosphate, and nitrate soda	...	134½	134½
5. Ammonium salts, 400 lbs.	...	58	50½
6. Nitrate of soda, 550 lbs.	...	77½	64
7. Full minerals and ammonium salts	...	162	137½
8. Full minerals and nitrate of soda	...	175½	146½
9. Superphosphate, 3½ cwt.	...	121	73½
10. Full minerals	...	123½	75½

With regard to the large quantity of Potatoes yielded by plots 9 and 10 in the first year, the results show that there was available nitric acid in the soil which was readily taken up in combination with the phosphates and other minerals. This so exhausted the land of its nitrogen, that in the second year (1877) the superphosphate (plot 9) yielded but 5½ cwts. of tubers per acre more than the unmanured plot, and the full mineral (plot 10) only 15 cwts. per acre in excess of that without manure. The probable explanation of the fact that the superphosphate alone and the full minerals alone yielded more produce in the first year than was produced by the dung alone, or the dung and superphosphate, is that owing to the late application of the dung there was denitrification caused in the soil, and the growing period was not long enough for the nitric acid to be fully converted into a soluble condition. When, however, nitrate of soda (plot 4) was added to the dung and superphosphate there was ready formed nitric acid, and accordingly a considerable increase of crop, although even here 2 tons per acre less than when the nitrate of soda was applied with the minerals (plot 8).

I suppose doctors will differ even in Potato culture. While "W. D." thinks these results not at all satisfactory, for myself I think they are most convincing, that artificial fertilisers are much more readily available to plant growth than the best made farmyard dung. Market gardeners who make a speciality of growing large areas of early Cabbage or

Cauliflowers, find it almost impossible to make the land rich enough the first year. They find the second and third year, even with smaller quantities of dung than the first, gives better results. Why is this? It is owing to the slow nitrification of the nitrogenous organic matter of the dung, accordingly many growers now add nitrate of soda or gnano to the dung, to furnish more nitrogen to the plants early in the season. The farmyard manure will furnish nitric acid for the late crops, but if very early growth is expected some more soluble nitrogen must be added than that provided by the dung. This is no less true in growing Cucumbers on a large scale under glass.—J. J. WILLIS, Harpenden.

Coleus from Seeds.

IT is surprising with what ease these are obtained from seeds, and it is not less curious to note how few obtain a new stock by such means. Very fine sorts can be had from seeds, indeed among the large-leaved section much the finest I have yet seen were obtained in this way. Coleus often play an important part in the embellishment of the conservatory and dwelling rooms in summer and autumn, and where such is the case new blood introduced in this way cannot be otherwise than interesting and useful. With these, as with other plants obtained by seed, it is not a wise policy to choose the strongest and throw away the weaker seedlings, as often the slow and weak produce the choicest plant when it has attained maturity.—S.

A Protector Novelty.

WITH reference to the above in *Journal of Horticulture* for March 14, it certainly has the appearance of being a very useful thing to keep the fruit of Strawberries off the ground, which would keep it clean and prevent much of it from rotting in wet weather. But I cannot think it will be "practically imperishable" unless it is very much more effectively galvanised than are the holders of metallic labels put in commerce a few years ago. These are so lightly galvanised as to render them practically useless here, as the atmosphere eats them nearly away in two years, which compels us to give up their use, and to fall back on the ancient wooden label. So that, unless the protector in question is thoroughly galvanised, it will be next to useless in all districts where the atmosphere is laden with sulphuric acid as it is here.—J. H.

Potatoes.

I QUITE agree with "N. H. P.'s" remarks as to the advisability of carefully testing varieties of Potatoes before planting them in quantity. I have been in the habit of growing, amongst others, Reading Russet as a midseason, and Saxon as a late variety, and found them everything that could be desired as regards both productiveness and flavour, the latter keeping in splendid condition right on till new Potatoes were obtainable. On taking over a fresh charge two years ago I planted these two varieties as usual, but found by painful experience (which is certainly the best tutor) that neither were useable; both varieties were exceedingly soapy and insipid, so that I was compelled to discard them. I make a practice of growing about twelve varieties each year, including two or three fresh ones. If I consider any of these improvements on the older kinds I substitute them, but only when they are a decided advance. It is a great mistake to jump at new varieties too eagerly, it is much better to stick to the well-known old standard varieties, which, though common, would not be so were they not reliable. On the other hand one season's trial is not a fair test of the capabilities of a new Potato.—W. R.

Seakale Lilywhite.

MY experience with this Seakale does not coincide with that of your correspondent, Mr. Easter of Nostell Priory. I find it has a more delicate constitution than the pink or common variety, consequently it does not grow so strongly, and of course does not form such large crowns as the common kind. I find, too, that the cuttings are very liable to decay after being made and laid in soil previous to being planted. Quite 70 per cent. of mine so decayed last year, while not any of the other kind did so. I also find that it is not so good for very early forcing—before Christmas, for instance—as the common kind; it is a longer time in becoming fit for use, and is much weaker. Its foliage does certainly ripen ten days to a fortnight earlier in the autumn than the ordinary kind. This fact led me to suppose that it would be the better kind for the earliest forcing, which, after several trials, I found to be the reverse, the older kind coming quicker and stronger. We force 3000 crowns or roots every year, from which we commence cutting not later than the middle of December, and continue to do so every day till well into June. For the last six weeks supply the roots are retarded. The cuttings are made in the usual way.—J. H. W.

Mr. James Sweet, V.M.H.

WE announced in last week's issue that Mr. James Sweet, the successful market grower of hardwooded and other plants, had been appointed a Victorian Medalist of Honour in horticulture by the Council of the Royal Horticultural Society. In the present number we are pleased to introduce him to those of our readers whose abodes may be placed far from London or Leyton. Mr. Sweet was born in London sixty years ago, and when his school days were finished he had a very strong desire to gain a livelihood by growing flowers and fruit for the market. How he began, and how he has continued in his chosen calling we will leave him to tell himself. He writes:—"I was blessed with a dear father, who wished me well in my choice and did what he could to further it, but it was no easy matter in those days to find a suitable place, for market florists were scarce for a youth to gain good experience. My first introduction was to the late Mr. George Glenny of Fulham, but the premium was large, and the nursery very small. After some time I heard of Mr. P. Kay's nursery at Finchley, and this proved to be what I wished for, so I was apprenticed for four years, and received a good experience in the growing of flowers and Grapes. On completion of my term I thought it well to gain further knowledge, and placed myself under Mr. George Tillyard, gardener to Sir John Kelk, Priory Gardens, Stanmore. At twenty-one years of age I thought it was time to start in business, and purchasing a nursery at Leyton, I turned in with right good will, for it has always been, and is still, a labour of love to grow plants. But after twenty-three years of happiness and prosperity I had to retire from Leyton, although very reluctantly, as I had to leave so many friends, among whom were the late Mr. John Fraser and the members of the District Council. There are not many left now, however, and the town having grown so rapidly, the smoke made it impossible to conduct the business successfully, so I removed to my present nursery, and although the competition is great to that of forty years ago, still there is a good demand for the best quality plants, and an increasing demand for them."

We hope to visit Mr. Sweet at his nursery before very long; meanwhile we advance our felicitations.

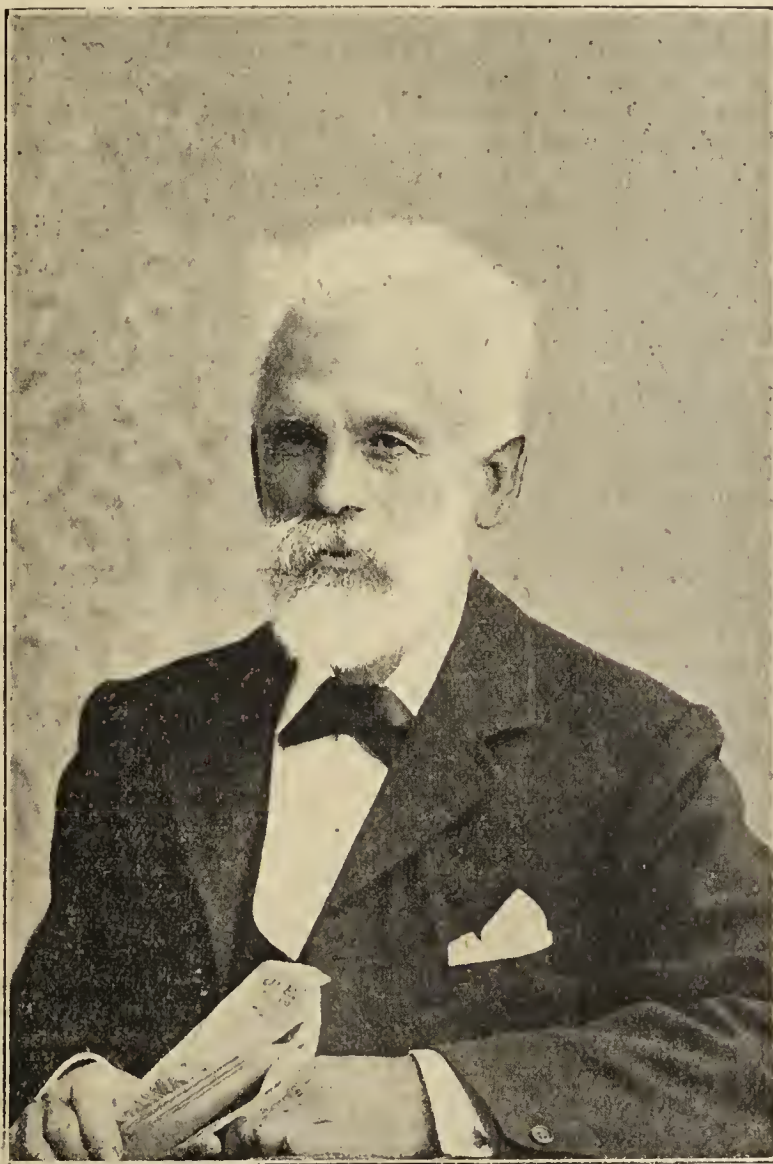
Notes on Young Vines.

FOR EARLY FORCING IN POTS.—Some cultivators prefer Vines of the current year's raising from eyes, and others cut-backs, or canes of the previous year's propagation cut back to one or two buds. I give my vote for the latter, as they are stronger, and have an established root system. In either case, the Vines should now receive their final potting. Clean pots, efficiently drained, should be used, and the size 12-inch. Pot firmly in good turfy loam, with a 12 inch potful of wood ashes or a 4-inch potful of best quality kainit to every barrowload of loam, and the latter amount of dissolved raw bones, and also of soot, mixing thoroughly. Place the pots at the sides of the house, preferably on hot-water pipes with an intervening slate, keeping the house rather close, and if the weather be bright, shade for a few days. Train the canes as near the glass as practicable without touching, to insure the solidification of the growths, pinching the laterals at the first leaf, and other growths treat similarly, stopping the lead at from 6 to 8 feet, according to the vigour and the length of cane desired.

YOUNG VINES.—Those planted last year having made good growth and cut-backs at the winter pruning to about three buds of the bottom of the trellis, must be encouraged by gentle fire heat, so as to allow time for their making and completing a good growth. Take one shoot forward from the extremity of the cane as leader, and pinch off the points of the laterals at the first leaf up to a height of 6 to 8 feet. The result will be concentration on the part below, and some increase of lateral growths, which, suppress, by pinching to one leaf as made, but

take one growth forward from the point above 6 to 8 feet as leader, the cane having been stopped there. A side shoot may be allowed on each side of the rod at the bottom of the trellis, which pinch at two joints beyond the fruit, leaving a bunch on each, and stop the laterals and and subsequent growths to one joint as made.

PLANTING YOUNG VINES.—Some growers consider autumn the best time to plant Vines, but others prefer the spring, and with the latter I agree. Where provision has been made for inside and outside borders the Vines should be planted in the former, confining the roots to it until they have occupied the allotted space. The Vines, if cut-backs of last year's raising, may be placed in position either before or after they have grown to the extent of a couple of inches, the roots being spread out evenly in the border. Vines of the present year's raising will not require planting out for some time yet, though those raised in squares of turf may be transferred to the permanent quarters as soon as the roots are protruding through the sides. This method is the best for raising Vines for permanent planting. The Vines planted dormant, or only just moving, will need cool house treatment, but if in growth they must have a temperature of 65° at night, and 70° to 75° by day, with an advance of 10° to 15° from sun heat, whilst Vines of last year, and only advanced an inch or two, will be accommodated with a night temperature of 50°, they starting better by natural means than artificial. Sringing will be needed, occasionally to maintain a genial atmosphere.—GROWER.



MR. JAMES SWEET, V.M.H.

Grassendale and Aigburth Show.

THE above show was opened on Saturday last in the Grassendale Parish Room. The Committee, with Mr. W. Evans as chairman, and Mr. T. Johnson as able secretary, had done their share of the work excellently. Hyacinths were in very strong force, and there is no disputing the fact that the style of growing three bulbs in a 7-inch pot is distinctly good. This section was a particularly strong feature of the show. Mr. W. Evans, gardener to Mrs. Lockett, Grassendale House, had the premier lot, Mr. G. Leadbeater occupying second position. For twelve Hyacinths, distinct, Mr. W. Evans again secured the lead, staging the following varieties—Alba maxima, Queen of the Blues, Marie, Coem s, Gigantea, Princess Wilhelmina, Von Schiller, Roi des Belges, Baroness Von Thyll, King of the Yellows, Charles Dickens, and King of the Blues. Mr. T. Wilson, gardener to O. H. Williams, Esq., Fulwood Park, Aigburth, ran the closest of seconds, his Jacques, Isabella, and General Pellissier being exceptionally fine. Mr. Wilson

also showed three beautiful sets, three in each pot. Mr. Leadbeater staged a grand six, distinct. The Tulip classes were a decidedly smart lot, the prizes going for single and double to Mr. F. C. Keightley, Aigburth, for the most perfect blooms, of which Keizers Kroon, Proserpine, Joost Van Vondel (white), Ophir d'Or, and Vermillion Brilliant shone out amongst the singles. Superb Amaryllis gained Mr. T. Johnson the leading position. Mr. Leadbeater showed a hardy Azalea, white Lilac, and a giant Dentzia gracilis in faultless style. Some grand specimen Cyclamen from four-year-old corns were staged by Mr. T. Ankers, gardener to Alderman W. B. Bowring, J.P., Aigburth, who also won the classes for three Azaleas and one forced hardy plant. Mr. Keightley won for Palms, Clerodendron Balfourianum, Cinerarias, and one Azalea. A bright plant of Dendrobium thyrsiflorum came from Mr. J. Heaton, The Lawn, Aigburth, viz., the specimen Orchid, and from the same source Clivia miniata, the specimen greenhouse flowering plant. Dendrobium nobile and the rare Lycaste Harrisonæ were the two Orchids from Mr. C. Duke, Fulwood Park, Aigburth. Mr. Evans had the best greenhouse Rhododendron and Primulas. Mr. Bustard, St. Anne's Mount, Aigburth, staging the plant of Rose Maréchal Niel.

The attendance in the afternoon was moderate, but the show in the evening was crowded in every part.

NOTES & NOTICES

Weather in London.—The past week has been variable, though almost constantly cold. Thursday, Friday, and Saturday were dull and cold, Sunday was a brilliant day of sunshine, Monday brought constant heavy snow showers, but Tuesday was a delightful day—"cold, piping make the blood dance to." Wednesday morning, as we go to press, is again very cold.

Weather in the North.—There has been more sunshine during the week ending the 25th inst., and latterly a return of frost, there being a succession of frost nights from 21st to the 25th, when 9° were registered. Cold winds from the north-east have also prevailed. Monday was bright, and frosty throughout.—B. D., *S. Perthshire*.

Gift by the Duke of Fife.—Through the generosity of the Duke of Fife another supply of trees has been obtained to plant on the streets of Dufftown, N.B., in place of those that have been mischievously cut down during the last three years. This time the young trees are Sycamores, from 9 to 10 feet in height, this tree being as hardy as can be obtained for street decoration, smoke, &c., not retarding their growth in any way. Fifty specimens have been supplied, and these will be planted in Cowal Street, Fife Street, Balvenie Street, &c.

To Improve British Orchards.—Members representing rural constituencies generally seem to think that our department of agriculture does very much less for the oldest industry than is performed by similar State bureaux in foreign countries, or even than is done in Ireland. This feeling occasionally finds expression in questions, and the latest inquiry of this kind stands in the name of Sir James Rankin. He proposed to ask Mr. Hanbury whether he will consider the desirability of establishing pomological stations in convenient parts of the country for the purpose of making experiments in the growth of the Apple and Pear, so as to enable persons employed in the fruit industry to obtain reliable information.

Miss Ormerod, LL.D., V.M.H., &c.—We announced in the Journal last week that Miss Ormerod had added another title to her previous honours by her reception of the Victorian Medal of Honour in horticulture. Even the humblest among us knows something of her record; how for twenty-four years she has furnished a very comprehensive annual report on injurious farm, garden, and insect pests, and has each year occupied herself investigating the life-histories and peculiarities of pests which at the time were more or less virulent. The result has been to gradually complete the histories and suggest preventive measures for most of our worst insect pests. Amongst others of her well-known works she has published a "Guide to Methods of Insect-life," "Observations on Some Injurious Insects of South Africa," a "Handbook of Orchard and Bush-fruit Insects," besides a very large number of treatises in booklet form. We are pleased to be able to portray Miss Ormerod on page 257, and we sincerely hope she may be spared for a long time yet to enjoy a well-earned rest at her St. Alban's home.

Fruit from Jamaica.—Every success has attended the first consignment of fruit from Jamaica by the Imperial Direct West India Mail Service. The fruit consisted chiefly of Bananas, of which there were 18,000 bunches, both ripe and green; Pine Apples, Oranges, Pomelos (or Grape fruit), and Mangos. The Pine Apples, according to "The Times," were of two descriptions—the native growth, known as the Ripley; and the Smooth Cayenne, cultivated mainly in the Azores, but now being grown in Jamaica specially for the English market. A dinner was given on Thursday, the 21st inst., by Mr. Alfred L. Jones, chairman of the new service, when there was a good display of the different kinds of fruits above mentioned, all of them being in splendid condition. Firms contemplate doing a large trade, especially in Bananas, Pine Apples, and Oranges; and certain houses intend in due course to import Limes. The Bananas, however, arrived unpacked, and considerable difficulty has been experienced with the railway companies, who have hitherto been accustomed to deal with this fruit carefully protected. They have agreed to quote terms for a ton or more in bulk, but they decline to accept it for delivery in small quantities.

Royal Horticultural Society's Examination.—Intending candidates are reminded that the above society's examination will be held on April 24th, so that they will require to work diligently from this time forward.

Death of Sir Edwin Saunders.—On the 15th of this month this venerable gentleman, the president of the National Chrysanthemum Society, died at his residence, Fairlawn, Wimbledon Common, aged eighty-seven. He was buried at Putney Vale Cemetery on the 20th inst.

Who Owns Roadside Trees?—The Norfolk County Council have decided to ask counsel who owns the trees growing by the roadside. A resident wrote protesting against the Council planting trees on each side of main roads for commercial purposes, and thus "degenerating into the Norfolk County Council, timber merchants, unlimited." The clerk said that the roads were vested in the County Council.

Forced Strawberries.—Those who are willing to pay a guinea a portion for Asparagus out of season can now gratify their taste for extravagance by giving 25s. a box for Strawberries. In the height of the Strawberry season one will not see finer fruit than that now offered in one or two London shops at the price named. The quantity in a box is 2 or 3 lbs., but the fruits are large and most carefully picked. The smaller and less choice fruits can be bought in the ordinary baskets at a much cheaper rate. These Strawberries are grown in France, but are, of course, forced. By general consent the naturally-grown British Strawberry has no rival anywhere, yet we are indebted to foreigners for forced fruits of a size and beauty which have not been exceeded in our best seasons.

The Weather and the Crops.—The weather during the last week has been of a very wintery character; the north-easterly winds have been keenly felt, and the month has been noted for the low day temperature and the absence of sunshine, consequently vegetation is in a very backward state. The earlier kinds of hardy fruit blossom, such as Apricots, Peaches, &c., are unusually late, and only just showing the colour of their blossom buds, so that hopes are entertained that blossoms have not been injured. Yesterday (25th) we had a good sample of March weather; heavy snowstorms fell at frequent intervals during the greater part of the day, but it soon melted, followed by 15° of frost at night, which produced ice three-quarters of an inch thick.—G. R. A., *Kempston, Bedford*.

"Thompson's Gardener's Assistant."—The Gresham Publishing Company informs us that the third volume of the new edition of "Thompson's Gardeners' Assistant," which is coming out under the editorship of Mr. William Watson, Kew, and which has been considerably delayed in publication, will be ready next month. The delay that has taken place, Mr. Watson explains, has really arisen from the effort to have the work thoroughly up to date, to secure which the final revision of certain important articles was postponed until the last moment, when, unfortunately, it was found impossible to get these articles put through with sufficient expedition, owing to the illness of some of the contributors. The necessity of waiting for certain plants to be in condition for illustration has also caused delay. The editor does not anticipate that similar delays will occur in the case of the remaining volumes.

National Sweet Pea Society.—At a well-attended public meeting of persons interested in the culture of the Sweet Pea, held at the Hotel Windsor on the 26th inst., Mr. George Gordon, V.M.H., presiding, it was unanimously resolved, on the recommendation of the General Committee of the Sweet Pea Bicentenary Celebration, to then and there form a National Sweet Pea Society, and an Executive Committee representative of all classes of horticulturists was formed to prepare rules, nominate vice-presidents, &c., and a draft schedule of prizes to be offered at an exhibition to be held during the coming summer. Mr. George Gordon was appointed chairman of the Executive Committee, Mr. N. Sherwood treasurer, and Mr. R. Dean secretary *pro tem*. In order that no time should be lost in perfecting the organisation, the Executive Committee will meet on Friday next at 5 P.M. at the Horticultural Club, Hotel Windsor. A considerable number of names were handed in as members, and the minimum annual subscription was fixed at 5s. Communications respecting the newly formed society may be addressed to Mr. R. Dean, 42, Ranelagh Road, Ealing.

Are Englishmen the Largest Consumers of Jam?—It would seem like it, for we read of one London jam merchant having received as much as 28 tons of Apricot pulp from California at one consignment.

Floral Conundrums.—Mr. Barry Pain has written a humorous satirical parody, "Another Englishwoman's Love Letters" (Fisher Unwin), that an appreciative "Star" reviewer observes "is likely to be the funniest book of the year." Mr. Pain culls from popular garden plants material for furnishing the latest specimens of conundrums. He asks: Can you tell why the Primrose? Because the China Aster. Why had the Foxgloves? To let the Box box. At what did the Crocus? At the Hellebore. Fun and funny things are cultivated in some gardens!—S. P. E. S.

Appointments.—Mr. H. Plumeridge, late gardener to A. Eykyn, Esq., Gayton House, Blisworth, R.S.O., Northampton, has been appointed head gardener to C. Craig, Esq., Floore House, Weedon, Northamptonshire. After five years' service as head gardener to A. Gilbertson, Esq., of Glanrhyd, Portardawe, near Swansea, Mr. T. F. Jones has secured the appointment of head gardener to J. G. Newton, Esq., Maesyderwen, Ystradgynlais, near Swansea, to carry out improvements which he is making throughout the gardens. Several ranges of glass houses are also to be erected. Mr. J. P. Kendall, late in charge of The Culvers park and gardens, Carshalton, Surrey, has been appointed gardener, with charge of plantations and roads, to the Right Hon. Lord Amberst of Hackney, Didlington Hall, Brandon, Norfolk.

Croydon and District Horticultural Mutual Improvement Society.—Tuesday evening, the 19th inst., was devoted to "Questions and Discussions," and proved both profitable and interesting. The subjects discussed were "The Shanking of Grapes," and "Fixed v. Moveable Shading." There was a very beautiful display of Orchids on the tables. Mr. M. E. Mills, gardener to Frank Lloyd, Esq., Coombe House, exhibited a fine well-flowered plant of *Cattleya Trianae*, having seventeen flowers, also a plant of *Cypripedium Rothschildianum*, with a spike carrying three fine flowers. Mr. W. J. Simpson, gardener to C. H. Walker, Esq., Falkland Park, South Norwood, brought six finely flowered plants of *Dendrobium Ainsworthi*. To Mr. Mills and Mr. Simpson the society's vote of thanks was awarded for their excellent exhibits.

Broughty Ferry Horticultural Association.—The monthly meeting was held on the 19th inst. in the British Workman Hall, Mr. Wm. Grant, president, in the chair. A large audience had the pleasure and profit of listening to a lecture on "Our Native British Ferns," by Mr. Robert Dow, teacher, Longforgan. By means of dried specimens, blackboard sketches, and lucid remarks, the lecturer imparted a deal of interesting information on the production of Ferns by spores, by means of the formation and location of whose enclosures on the fronds it was possible to distinguish many varieties. The habitats of the rarer kinds were named, in which connection, too, the lecture was valuable. Mr. Dow was accorded a hearty vote of thanks at the close. Mr. L. S. Reid, gardener, Douglas Terrace, Broughty Ferry, had forward for exhibition a couple of finely flowered pots of *Cineraria stellata*, and another much admired exhibit was a pot of *Cyclamen*, also beautifully flowered, by Mr. Bell, gardener, Corona. A vote of thanks to the exhibitors terminated the meeting.

Beckenham Horticultural Society.—On Friday last Mr. George Mount, of the Rose Nurseries, Canterbury, lectured to a good audience on "The Culture of Roses Under Glass." A growing plant and some splendid cut blooms of Mrs. John Laing, Captain Hayward, La France, Madame Montet, and some others, all with stems some 15 inches or more long, and furnished with ample and substantial leafage, were placed before the meeting as results of the practice to be detailed. Mr. Mount prefaced his lecture by referring modestly to his successes, which included three gold medals from the R.H.S., also stating that this was his maiden lecture. Commencing with the plant taken up from the open ground in November, placed in a cold house, not forced in any way the first season, the object to attain being a good sound growth ripened early ready for forcing the next season. The repotting, top-dressing, pruning, manuring, and dealing with insects were all treated in a very graphic manner, and a fund of valuable information given. Many questions were put to the lecturer, the replies being both practical and instructive. He also stated incidentally that a short time since he had the honour of supplying a few dozen blooms for her Majesty the Queen. The thanks of the society were tendered to Mr. Mount in a very hearty manner.—T. C.

A Minister's Pine Woods.—Mr. Gerard Balfour is building himself a house near Woking, which is surrounded by Pine woods and Heather-covered commons. He intends to make this a week-end residence, and being within reach of good golf links he can enjoy a favourite game.

Tea Culture.—The area of Tea culture in India at the end of 1899 was over 516,700 acres. * * * Window plants in Germany are often watered with cold tea or coffee, says an exchange paper. So they are in this country, we may add. * * * In Bermuda they are preparing for the annual harvest of Easter Lilies. * * * A London evening paper stated that at a recent meeting of the London Parks Committee a proposal was made to introduce butterflies as an attraction to Hyde Park! Considerable discussion is taking place in some of the London papers over this proposal.

Scent.—Germany has sent 20,000 francs' worth of scents to the Soudanese natives. Scents for the Dervishes form a considerable German industry. * * * Agricultural labour is exceedingly scarce in the Midlands. One day last week a daily newspaper contained advertisements wanting 260 farm hands of all sorts. * * * Seagulls were driven from the coast far up the Thames and around the Wimbledon district during last week's stormy weather. These birds truly predict gales and squalls.

Cambridge Horticultural Society.—The supporters of this society have agreed to hold an "open show" on June 11th; and on November 5th, 6th, and 7th will be held their autumn show. There are upwards of £100 in special prizes offered at these shows. The hon. secretary is Mr. A. Matthew, 20, Trinity Street, Cambridge.

Forestry for the Highlands.—Mr. Munro Ferguson, M.P., lectured on Friday last in Musselburgh on "Trees and their Uses," dealing chiefly with their use as a means of city adornment. He expressed the conviction that the surest way to maintain a large population in Highlands of Scotland was gradually to establish large State forests, and ultimately the Highland population would depend on their wood trade, just as people in Sweden and Norway did at the present time. In the course of the subsequent discussion, Mr. Tod, well known in the East of Scotland as a successful horticulturist, criticised the action of Edinburgh Town Council in planting only the commonest trees in the belt surrounding Portobello Public Park, instead of a collection of trees of beautiful foliage.

Scarcity of Journeymen Gardeners.—Within recent years the supply of journeymen gardeners has scarcely been equal to the demand, and this spring, whether from the ravages of the "khaki" fever or the disinclination of the modern youth to follow a calling offering so little remuneration for the abilities required, it is difficult to tell, but probably never before has there been such a dearth of young gardeners. Edinburgh nurserymen are at present greatly embarrassed owing to their inability to supply their customers with the necessary help at this the busy season of the year, one firm in the city having at present from thirty to forty vacancies on their books which they are unable to fill. Should this state of affairs continue there can be no doubt but that the pay and other privileges of the gardener will improve.—W. L.

Shropshire (Shrewsbury) Horticultural Society.—The great annual floral fête, known generally to horticulturists as the Shrewsbury Show, will be held this year on Wednesday and Thursday, August 21st and 22nd, in The Quarry Grounds, Shrewsbury. The schedule of prizes has been sent out, and anyone wishing to secure one can write to either of the hon. secretaries—Messrs. H. W. Adnitt and W. W. Nannton, with the address of the society, Shrewsbury. The cash prizes amount to over £1000, exclusive of gold and silver medals, so that there are still many incentives for growers to make their greatest efforts and so secure one of the "plums." The entries for the autumn show are stated to close on August 14th. It may be noted that in the open classes groups 2 and 3 are increased; while in class 24, for cut flowers, a cup is offered as the first prize. This is on page 11 of the schedule, where intending exhibitors will find the prize column has been left blank. Class 32 is fresh, and 73 and 74 (fruit) are new for this year. £20 are offered as the first prize for twelve bunches of Grapes; £15, £10, and £5 being respectively offered for second, third, and fourth places. For a collection of twenty dishes of fruit the same amounts have to be competed for. Another new class (No. 77) with a first prize of £3, has been arranged for a decorative exhibit. The hon. secretaries draw special attention to the fact that they cannot undertake to receive or return any exhibits.

The Gardeners' Royal Benevolent Institution.—His Majesty the King has been graciously pleased to continue his patronage of the Gardeners' Royal Benevolent Institution. We may remind our readers that the sixty-second festival dinner in aid of the funds of this institution will take place on May 22nd, the first day of the Temple Show, when Lord Llangattock will preside. The secretary will gladly receive the names of any gentlemen who will kindly act as stewards, or who would like to attend the dinner. Offices, 175, Victoria Street, London, S.W.

National Carnation and Picotee Society.—The year's report (1900) of the southern section of the above, leads off in a cheery tone, stating that the society still maintains its good standing. Perhaps it is not generally known that a copy of the "Carnation Manual" (the best and most useful work on the culture of the Carnation) is given by the society to all members on their accession, and a packet of Carnation seed from the unrivalled collection of the president, Martin R. Smith, Esq., is also presented to all subscribers of 10s. and upwards. Perhaps many will consider the advisability of supporting the society. The heat at the July show last year was too intense for the good of the Carnation blooms, though the show was successful. The exhibition for 1901 will take place at the Crystal Palace, on Friday, July 19th. Mr. Henwood, the hon. secretary and treasurer, would find his duties considerably lightened were members punctual in advancing their subscriptions. His address is Auricula Villa, 16, Hamilton Road, Reading.

Royal Meteorological Society.—The monthly meeting of this society was held on Wednesday evening, the 20th inst., at the Institution of Civil Engineers, Westminster, Mr. W. H. Dines, B.A., the president, being in the chair. Dr. Hugh Robert Mill, F.R.S.E., delivered a most interesting lantern lecture on "Climate, and the Effects of Climate." Climatology is as much a branch of geography as of meteorology; in fact, more, for it not only deals with the distribution of atmospheric conditions over the earth's surface, which is a geographical question in itself, but all the varieties of climate that give individuality to different countries are produced by the disturbing or controlling influence of land forms. It was while studying the influence of land forms on every kind of geographical distribution that Dr. Mill was struck by the far-reaching interest of the effects of climate, and so in this lecture he dealt with the visible effects of climate, such as attract attention and arouse inquiry as to their causes. After making a few remarks on the principles of scientific photography, and also calling attention to spurious photographs, the lecturer proceeded to distinguish between "weather" and "climate." Weather is the condition of the atmosphere at any moment with regard to wind, warmth, cloud, electricity, and precipitation, whilst climate may fairly be called the average weather of a place. Dr. Mill then exhibited on the screen a large number of photographs which he had himself taken on various holidays in many countries, in order to illustrate the peculiarities of climates in which heat, cold, wind, and rain respectively predominate, showing how the varying conditions of climate created by the greater land forms are responded to by the various adjustments of minor land forms and of plants, and how they are taken advantage of by man.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901.										
March.										
Sunday .. 17	E.N.E.	deg.	deg.	deg.	deg.	Ins.	deg.	deg.	deg.	deg.
Monday .. 18	E.N.E.	42.2	39.1	47.6	33.8	—	41.6	42.8	44.2	26.0
Tuesday 19	E.N.E.	39.7	37.7	41.6	39.4	—	41.2	43.0	44.2	38.2
Wed'sday 20	E.N.E.	38.7	34.6	41.6	35.3	0.27	41.2	42.9	44.2	33.0
Thursday 21	E.N.E.	38.6	37.2	41.3	34.6	0.12	41.2	42.9	44.2	33.4
Friday .. 22	E.N.E.	39.2	35.1	43.1	36.7	—	40.5	42.5	44.2	32.7
Saturday 23	E.N.E.	38.0	33.8	43.3	31.5	—	39.8	42.3	44.2	24.9
		39.7	37.2	42.4	36.1	—	40.2	4.21	44.2	31.0
MEANS ..		39.4	36.4	43.0	35.3	Total 0.39	40.8	42.6	42.2	31.3

Dull weather has prevailed during the past week, with very cold strong winds. Rain, mixed with snow, sleet, and hail, occurred on the 19th and 20th inst.

The Hippeastrum.

THE Hippeastrum is better known to us by the name of Amaryllis. The former is derived from *hippeus*, a knight, and *astron*, a star; referring to the shape of Hippeastrum equestre—Equestrian Star. The first species introduced were from the Cape of Good Hope and the West Indies, but the greater number are indigenous to Brazil and adjacent countries. I have read that Dean Herbert hybridised the African and American species, and founded a new genus, which he named Hippeastrum, or Knight's-star Lily, whence spring the present race.

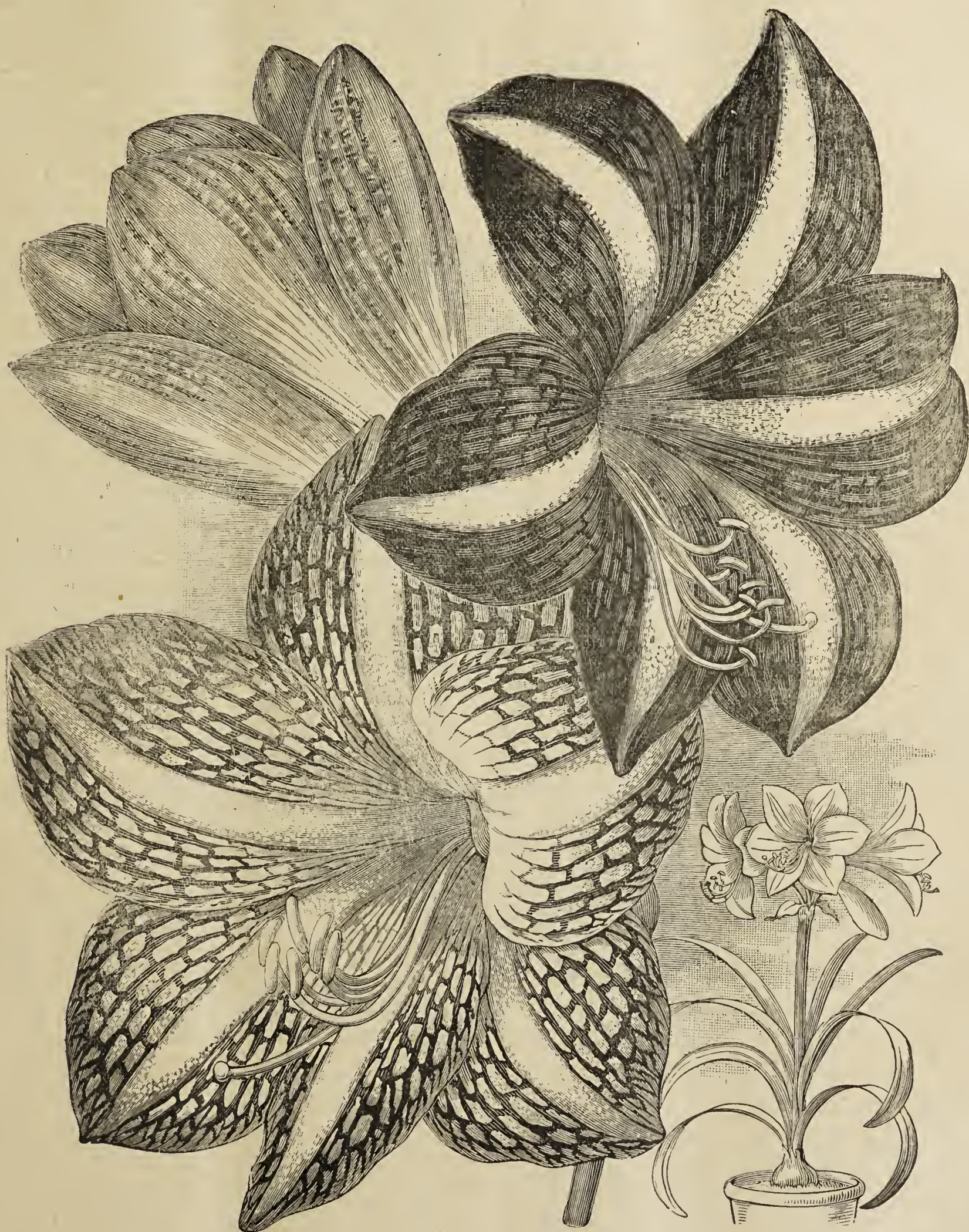
Probably to H. Empress of India we owe some of our best types. This good old variety was raised either by Van Houtte of Ghent, or De Graaff of Leyden, with other seedlings. Few subjects are more interesting and attractive than these most gorgeous flowers, the lovely colours contrasting as they do with soft or intensely deep shades, which are combined in a way that is not surpassed by any other flowers. Primulas, Cyclamens, and other plants carry us over the duller months of the year, and the Hippeastrum, when properly treated, will give you a bright and cheerful display in early spring, quite distinct from other things. Distinct species and hybrids have been crossed and intercrossed, until we have breadth of petal, size of flower, great substance, and perfect form and habit, which I should say has attained a degree far beyond the most sanguine expectations of the early hybridisers. I have grown Empress of India, Ackermani, Johnsoni, and many others, which were considered good at one time, but they have now passed away as weeds compared with the varieties of the present day. The old Sprekelia is still a favourite, as is formosissimum; it is very interesting to look back to the latter, for its grand colour and shape stands quite alone.

Messrs. Sanders introduced what they term a blue Amaryllis, and their traveller gave me a grand description of it (as travellers can do). We were induced to send for a flower, and thereupon tempted to purchase two plants of it. I cannot call it a blue flower, but still it has a very interesting colour of a bluish-lilac shade, and may prove useful in hybridising—that is, if ever I get the plants to flower. They were imported plants, and seem to take a long time to establish. The name is Amaryllis procerum. I believe that a plant of the same species bloomed at Kew a short time ago. There are evergreen and deciduous varieties of Hippeastrum, but in my opinion they are all more or less evergreen. By withholding water, and thus drying and ripening them, we cause them to lose their foliage, though with all this they retain it sometimes. By this ripening process we can flower them when we desire by placing them in heat. The true evergreen varieties should never be dried so far as to lose their leaves.

I have had far more experience with what we will term deciduous kinds, and they are the most accommodating. One can store them away in winter, when space in greenhouses is both restricted and invaluable; or one can put them in dry, warm sheds, or other out-of-the-way places, so long as it is warm and dry, but not under the plant stages, as some advise, as it might prove too damp. Anyone with a warm greenhouse can grow these plants satisfactorily, but they cannot have them in flower at this early date without stove heat. Sometimes they can be had in flower from February to July; the late ones we have in cold frames, put out, of course, when all danger of frosts have gone. I have even had them expand their flowers in the open air; so you see the old style of keeping them solely in hot stoves has, I am pleased to say, passed away.

We will now suppose that some wish to make a start with the plants. I would say to intending growers: Visit one or two nurseries where they are made a specialty of, and select the best when in flower, according to your fancy and requirements. No doubt your plants would be perfect—the price of them would also be "perfect," probably from 7s. 6d. to £5 each plant! The next season the plants may have improved or they may not, it all depends on the care which has been bestowed upon them. There is one thing certain, which is that you will only have the same colours you had the previous season. Thus I consider you lose a deal of very interesting work, work which should be a pleasure to everyone who is fond of flowers. In all work of this kind the employer's wishes are of the first consideration. You can imagine how anxious one feels after growing these plants three or four years from seed, and the delightful moments one spends in watching them as they open their flowers. Should the crosses not turn out well do not despair, but try again. I have been fourteen years trying to get really good and bold flowers, as round in the petal as possible.

The first thing is to obtain good plants from a reliable source. My advice is:—Obtain one or two good varieties; choose only those of good habit with broad petals; select decided colours; get these nicely



STRIPED AND NETTED HIPPEASTRUMS.

into flower, and some nice, bright morning, fertilise these with care, and do not fail to label or book the cross you have made, for it will be instructive and useful in three years hence, when the plants are in flower. I once had to pay dearly for not labelling those I had crossed, having inadvertently cut their blooms for drawing-room decoration.

I will now just explain my mode of fertilisation. In the first place leave only one or two pods of seed, for it is very exhausting to the plants to leave more. One pod will give you fifty or sixty seeds, and by leaving only one pod of seed the plant will bloom again next season. In a few days you will observe the pods swell; give the plant a nice light place, and keep your eye upon it, or you may find the pod burst and the seed fall to the floor. So soon as the seed is ripe and dry, at once sow in pans or boxes. Avoid sowing too thickly, for quite 90 per cent. will germinate; place in a temperature of about 60° so soon as they are up, and at all times give them all the light possible. When you can see that they have made minute bulbs, at once pot them singly into 60-size pots, using soil not too heavy, say two parts loam, one leaf mould, and a little well rotted manure. That from old Mushroom beds is what I use, adding sufficient sand to keep the whole open and sweet; have clean pots, and crock carefully.

When potted, replace in the same temperature, upon a shelf, where they will enjoy plenty of sun and air, watering carefully, and when the weather permits do not be afraid to use the syringe freely, to keep down red spider, which insect is very fond of these plants. I consider that this pest is the very worst we have to battle with. Use clean water and a good syringe, and, by wearing a pair of clogs, you can then paddle in water without wetting your feet, and what can be nicer when you have finished your watering and syringing than to change your clogs to nice, dry, clean boots?

The young plants should remain in these pots till March, and if all has gone on well and nothing has been neglected, they will require potting on into 4½ or 5-inch pots. This time the soil should be heavier, say three parts loam, one of mould, and one of well-rotted manure, with sufficient sand to keep the whole open. Grow on in an intermediate temperature, only shading enough to prevent scorching. Syringe heavily throughout the summer months, and by the end of August or middle of September they will have finished their growth. Put them in a light house and winter them at a temperature of 45° to 50°, giving just sufficient water to keep them moving at the roots. Do not incite them to make leaves at this dull time of the year. Here they should remain till March, then again repot into 6 or 7-inch pots, according to the roots they may possess, though a few may not require it at all. I do not believe in potting unless it is necessary. Use soil as at the last potting, and a few handfuls of bonemeal or dust may be added with advantage.

Grow them on again in an intermediate temperature the same as last season, with plenty of light, air, and shade. The plants will be two and a half years old in the autumn, so by degrees withhold water altogether, but do not allow the bulbs to shrivel. In February top-dress and ram the soil round the sides of the pots, as they will not require potting during the spring. Afford a thorough soaking with water, also stove heat, and the bloom spikes will soon appear. They will be in full beauty in six or eight weeks' time, according to the weather. As the blooms open remove to a cooler house, for they will last much longer here, especially if shaded from bright sunshine. If the plants are arranged with Ferns or Spiræas it adds greatly to the effect of the flowers, for they do not always have their own foliage when in flower. Seeing they are in a cooler house do not overwater, so as to avoid premature decay of the roots.

Thus the grower will now have good flowering bulbs, which he may grow on again as during the previous summer. To the unpotted plants give several applications of manure water, with winter treatment as last year. In spring the bulbs will require different treatment. Have all the old soil shaken out from the roots, and thoroughly clean the bulbs by taking all the old loose skin off; also sponge them with soapy water, and give a good dusting over with tobacco powder, after which pot them up again. This may be done annually, for I have proved to my own satisfaction that it is both good and necessary for the welfare of the bulbs. I may add that my present complement of Hippeastrums numbers about 300 plants in various stages of growth, from two years upwards, exclusive of younger seedlings. Once all my plants were in very bad state through overwatering them, and not cleaning as I have advised, besides wintering them in a very damp house. They were all "rusty," similar to the appearance left after attacks by mites.

The Hippeastrum is subject to red spider, thrips, and mealy bug. For the two former fumigate and syringe heavily, and for the latter nothing beats sponging with softsoap and water. The majority of growers usually plunge their flowering bulbs of Hippeastrum in a hotbed, but it is a system I have never practised and really do not think it is at all necessary.—A. CRYER.

Certificated Plants.—No. 8.

The Fritillaria.

WHILE several forms of *Fritillaria* received awards during last forty years covered by the R.H.S. list of certificated plants, none of them can be said to have become popular, because requiring special cultivation. It is curious to note that no form of *F. imperialis* (Crown Imperial) has been so distinguished, and yet it is the type one finds most commonly in gardens. Mr. F. W. Burbidge, in his "Propagation and Improvement of Cultivated Plants," laments that little or nothing has been done to improve the genus. The Dutch lists show no novelties, unless it be in the direction of those with variegated foliage, and to these home growers appear to attach but little importance. The large-flowered forms of the single yellow and the single red are really gorgeous plants in the border, when fully established in suitable soil.

The Fuchsia.

We appear to have almost reached the extreme limits of improvement in the *Fuchsia*. The list under notice does not contain the awards to any florists' flowers made since 1887, a fact I omitted to mention earlier in the course of these articles. John Salter, while he was at Versailles, France, raised a number of varieties, so did Cripps, Harrison, Standish, and others. Such species and hybrids as *corymbiflora*, *dependens*, *fulgens*, *Standishi*, *Dominiana*, &c., were popular plants in conservatories in the forties and fifties, and then it was that Mayle, Smith, Banks, and others began to raise the progenitors of the fine decorative varieties grown in the present day. One sometimes meets with the old *Venus Victrix*, said to have been the first white sepalled *Fuchsia* raised. Its home was in Kent, and it was distributed at a high price by Mr. Thomas Cripps, a nurseryman at Tunbridge Wells. One of the most prolific of raisers during the fifties and onwards was Mr. Edward Banks of Deal. It is claimed for him that he obtained the first white corollaed variety, which was succeeded in 1857, or thereabouts, by a French introduction named *Madame Corneillisen*. I well remember with what interest the blooming of this variety was looked for. The latest most successful raiser is Mr. James Lye of Market Lavington, Wilts, his progeny being remarkable for their vigorous growth and freedom of bloom. Invaluable as the *Fuchsia* is as a decorative plant, it can scarcely be said to be generally cultivated so well as its merits demand, though at Trowbridge, Bath, and elsewhere large and imposing specimens are grown for exhibition purposes. *F. triphylla* should be noted as a charming plant for a warm greenhouse.

The Gladiolus.

One of the foremost flowers of the past half century is the *Gladiolus*. Few contemporary horticulturists probably remember *G. pscittacinus*, a somewhat small, pale-coloured species, introduced many years ago from South-Eastern Africa. This, according to Van Houtte, having been crossed with *G. cardinalis*, produced *G. gandavensis*, the advent of which was hailed with marked approval; this, in its turn crossed with the pale-coloured *G. floribundus*, and with the more brilliant *G. ramosus*, no doubt proved the remote parents of the splendid varieties of the present day. One of the first to take in hand the improvement of the *Gladiolus* was Mons. Souchet. He availed himself of the assistance of several species as parents, but more recently *G. gandavensis*. Mr. John Standish raised, in the early seventies, some fine varieties, but it has been reserved for Messrs. Kelway & Son, Langport, and Messrs. Burrell & Co. of Cambridge, to perfect the flower as we see it in the present day. Such growers as Messrs. J. Douglas, S. Dobree, W. H. Fowler, the Rev. H. H. D'Ombraïn, and others brought the *Gladiolus* to a high level of beauty as an exhibition subject.

The section known as *Lemoinei* originated with M. Victor Lemoine of Nancy, France, by crossing the Cape species, *G. purpureo-auratus*, on to some of the fine forms of *G. gandavensis* hybrids, and they are popularly known as Butterfly hybrids. By further originating a cross between the large blotched *Lemoinei* varieties and *G. Saundersi*, a rich crimson species obtained from the Cape, M. Lemoine produced the section known as *Nanceianus*, the flowers of which show extraordinary dimensions, and are termed by some Giant *Gladioli*. A section of large flowered varieties, known as *Childsi*, which is reported to have been raised in the United States, came from a cross between *G. Saundersi* and *G. gandavensis*; large flowers are the prevailing characteristic. A white variety of *G. Colvillei*, also a hybrid, is very largely grown under the name of *The Bride*; and the varieties of the early flowering and dwarf growing *G. ramosus* are very handsome. Two crimson flowered varieties of the *gandavensis* type—*G. bowiensis*, the origin of which is unknown, and *G. brechleyensis*, a richer crimson than *bowiensis*—raised by Mr. Hooker, a nurseryman at Brechley, were highly popular for many years. The latter is still much cultivated.

The Gloxinia.

This splendid genus has not only undergone a great improvement in the size and form of the flowers during the past fifty years, but

there are those living who have witnessed its change from a pendent and somewhat flattish corolla to one erect, and as rounded as a modern wine glass. The original form has almost entirely ceased to be cultivated, though reversions to it will occasionally appear among seedlings of the best blood.

The first of the erect flowered type was *G. Fyiana*, raised from seed in 1844 by Mr. John Fyfe, a gardener at Rothesay, Bute. Mr. G. Nicholson tells us that "the innumerable forms which are cultivated as *Gloxinias* rightly belong to the genus *Sinningia*, and most of them are derived from *S. speciosa*." Our forefathers grew this as *G. speciosa*, and employed it with *G. caulescens* as seed parents. In this country Mr. Garton, then gardener at Syon, was one of the earliest raisers, as in the year 1844, the same year in which Mr. Fyfe obtained his break, Mr. R. Glendinning, then a nurseryman at Turnham Green, exhibited four of the Syon House seedlings, which were highly thought of. Quite a long list of varieties have been certificated by the Floral Committee, but so fine are the present-day strains that it is only a flower of extraordinary merit, in regard to size and form, or of new and novel markings, which can now obtain an award. Some beautiful maculated varieties mark one of the latest developments in the *Gloxinia*. Modes of cultivation have changed, and so rapidly do seedling plants grow into size under proper attention that it is now possible to have the plants in bloom in six months from the time of sowing the seeds. —R. DEAN.

Apples.

Late Keeping Culinary.

If a consensus of opinion were taken of the three best late cooking Apples, it is probable that Lane's Prince Albert, Northern Greening (syns. Walmer Court, Cowarne Queening, and John Apple), and Wellington (syns. Dumelow's Seedling or Normanton Wonder) would come out very near at the top. Northern Greening, however, owing to its vigorous growth is best adapted for orchard planting. It is an abundant bearer, and its quality is excelled by none, the greenish-white flesh being tender, crisp, juicy, with a somewhat vinous flavour, and I know of no variety which, when baked whole, produces such a rich-flavoured syrup or jelly-like juice. If it possesses an objection it is its comparatively small or medium size, but if well cultivated and not allowed to bear too abundantly, the fruits attain to a satisfactory size. My first and most intimate acquaintance with the "Johns" or "Jacks," as this variety was provincially called in South Warwickshire, was when a boy, as my father had under his charge a large orchard in connection with the kitchen gardens on a nobleman's estate, in which the greater number of Apple trees were of the varieties in question, and the useful Hanwell Souring. The wonder is that the Northern Greening is not more extensively cultivated, being such a regular cropper. Probably this is owing to the numerous first-class varieties which have appeared during the last half century, and which are remarkable for size and colour. But more surprising still is the fact

that during an almost constant acquaintance for nearly the last two decades with the Birmingham fruit market, I have observed but very few consignments of this variety, though plenty, or in fact more than should be, of greatly inferior and smaller kinds. A large proportion are comparatively rubbish, yet strangely they find as ready a sale as the better class and larger kinds.

There is, however, generally a fair quota of the better class varieties forthcoming, though far from sufficient, and were it not for the American and other foreign supplies home-grown Apples would be at a high premium, and a stimulus afforded for a more extensive cultivation of the Apple in this country. Taking the next variety, the Wellington, as it is popularly known by in Covent Garden Market, is one of the most valuable from November till March as a sauce Apple, to which its brisk acidity and slightly aromatic flavour specially lends.

It is also a vigorous grower, and is hardy and prolific.

The history of this popular Apple is described in Dr. Hogg's invaluable "Fruit Manual" thus:—"This excellent Apple was raised by a person of the name of Dumeller (pronounced Dumelow), a farmer at Sharkestone, a village in Leicestershire, six miles from Ashby-de-la-Zouch, and is extensively cultivated in that and the adjoining counties under the name of Dumelow's Crab. It was first introduced to the neighbourhood of London by Mr. Richard Williams of the Turnham Green Nursery, who received it from Gopsall Hall, the seat of Earl Howe, and presented specimens of the fruit to the Horticultural Society in 1820. It was with him that the name of Wellington Apple originated, and by which it is now known in the London markets."

A great rival to the preceding kinds is Lane's Prince Albert, rapidly becoming popular, and possessing as it does several high attributes, such as an early, regular, and free bearing, long keeping, large size, of excellent cooking qualities. It has also fine flavour, and crops equally well either as a bush or standard; though in the latter respect it is not so suitable for orchard culture, because the weight of the crop brings it into the reach of cattle. For market gardens and plantations it should become popular. So far it



APPLE LANE'S PRINCE ALBERT.

has been almost conspicuous by its absence in the Birmingham market. Grown on the Paradise stock its large handsome fruits are invaluable for the exhibition table; and for villa or other similar small gardens it is indispensable. So great, however, is its cropping quality, that to obtain large fruits a considerable amount of thinning the young fruit is requisite. As an illustration of its prolificacy the annexed figure of a vigorous tree, growing in an allotment garden at Edgbaston, near Birmingham (being one of several called the Waterloo Gardens, established in the year 1815 in commemoration of the battle of Waterloo by a former Lord Calthorpe), will bear out what I say. The tree is in a garden rented by Mr. Emanuel Withers, one of the noted local Gooseberry exhibitors, and who, at my suggestion, had a photograph taken in September last of one of the half a dozen trees of the variety in question. All the trees are similarly laden with fruit, and last year's crop was nearly as heavy. The trees were planted about eight years ago, so highly had the variety been recommended to the owner, and who also is a successful Tomato grower.—G.



The Battle on the Embankment.—The thinning of the Plane trees on the Thames Embankment, though no doubt a necessary operation, is a painful sight just now to the *habitué* of that magnificent thoroughfare. One morning the trees stand in all their strength, waving their tassels to the seagulls circling above them; the next morning their picturesque branches lie in neat bundles on the ground, and the doomed tree itself has become a mere stake, on which patches of clean pale yellow wood show where the cruel saw has been at work. A rope is round its neck, and its destroyers are hacking at the strong pink roots; and on the third morning, as you pass, not a sign betrays that under the iron grating, neatly let into the ground, a few days ago one of the limited number of trees which make themselves thoroughly happy in London was standing in full strength. It is a subject for a philosopher, says the "Westminster Gazette," to ponder over.

The Uses of Spanish Moss in the Southern States of America.—Thousands of pounds of Spanish moss are sent yearly into Florida for the stuffing of pillows. Besides this, there are various other uses for this lowly little plant. One of these that has been recently discovered is that of a strainer and purifier of cane syrup. It has been found that a finer syrup can be made by straining the cane juice through moss than through any other material, and its use in sugar mills for this purpose is becoming general. Another new use of the moss is the blanching of Celery. The plant is wrapped from the ground toward the tops of the leaves, these being allowed to project beyond the wrapper. Successive wrappings are put round as the plants continue to grow. The moss is said to be clean and cool, and does not cut off ventilation, but we fail to see where the system improves upon earth-blanching.

A Cherry Tree Feeding on Itself.—An interesting report of an old hollow tree is given in "Torreya," by Dr. P. A. Rydberg, as follows: On Faitoute Avenue in New Orange, N.J., used to stand an old Cherry tree 7 or 8 feet in circumference. About 7 feet from the ground it divided into two trunks. Just at the junction of the two there was a big hole indicating that the tree was decayed and hollow. Nothing of peculiar interest about this tree was revealed, however, until the severe storm came in the spring of 1899, when one of the two trunks was torn down. The hollow trunk contained several bushels of Cherry pits and mulch, produced by decayed Cherries and leaves. An adventitious root had sprung from the margin of the hole, ramified in this mass of decayed matter, and grown to the size of the thickness of one's wrist. Not satisfied, however, to feed only on old Cherries and leaves, it had sent numerous branches into the decayed portion of the trunk, and the tree was actually feeding on itself, like the old wolf which, according to the fable, was eating its own frozen legs. The lines of Tennyson as to rising

. On stepping stones
Of their dead selves to higher things

are not inaptly applied to fit the case.

Tree Ivy.—All good cultivators know that a branch that has changed somewhat from the normal form retains its character when cut off and made to produce roots of its own. Many new Roses, says "Mée-hans' Monthly," have been raised in this way by propagating from a sportive branch, and, indeed, fruit growers know that a bearing branch, grafted on a young tree, continues to be fruitful, though the branches of the original may retain its useful luxuriance. In nurseries it often happens that the fruiting or flowering branches of plants have a marked difference in their foliage and habit from younger forms. Many varieties of *Euonymus*, especially of the Japanese Burning Bush species, propagated in this way, are distinct enough to be regarded as separate species. The English Ivy is another illustration. The leaves of the flowering condition are entire, and in many ways different from those in the climbing state, and they show no disposition to send out rootlets and climb, as the younger branches do. When these flowering branches are cut off, and made to throw out roots of their own, they carry this shrubby or "tree" character with them. In this condition they make pretty room or conservatory ornaments and deserve to be more popular.

Two Desirable Plants for Florists.—The Egyptian Papyrus and *Monstera deliciosa* are both very ornamental and useful plants for florists' decorations during summer. Though they are both plants from warm countries they yet can be hardened sufficiently to be applicable in dwelling rooms, as, for instance, to conceal the fireplace when the fire is not lit. Both are very distinctive, and are quite after the style of structure that is desired for such decorative uses.

Fruit Market in Cold Siberia.—Siberians, as a rule, are not great consumers of Lemons, nor do they use them in tea as much as may be the custom in Central Russia, cream having come into general use by the importation of condensed milk from the United States, France, and Switzerland. Most of the Lemons, Raisins, Figs, honey, Olives, Olive oil, Oranges, and nuts imported into Siberia come from Europe via Odessa. All of these are brought by steamer, usually carefully packed, and at a cheaper rate than could be given by Pacific Coast merchants. Californian products have already been introduced, especially the canned fruits, which are in great favour. Some Lemons and Raisins come from the United States, Figs and Olives from Italy and France, and a little honey from Russia, while Oranges and nuts come from China and Japan. No fruit from China, Japan, or Manchuria compares with that cultivated in Europe and America, and if it were possible to supply leading fruits to the Siberian market, such enterprise would be likely to prove a commercial success. This, however, would largely depend, says the "Rural World," on low rates of freight, quick transit, and careful packing.

Jotting on Pines.—Suckers should now be started to afford a supply of ripe fruit from about December onwards. The pots most suitable are 5 to 7 inches, according to the size of the suckers. Drain efficiently, use fibrous loam torn up moderately small, pressing the soil firmly about the base of the suckers, and plunge in a bottom heat of 90° to 95° at the base of the pots. Roots are usually emitted in from ten days to a fortnight, and until then water is not necessary. If very bright weather prevail slight shading is desirable for an hour or two at mid-day, and a light syringing through a fine rose will be necessary about twice a week. The temperature should be kept at 55° to 65° by artificial means, with 5° to 10° or 15° rise from sun heat. Any young plants in an unsatisfactory state should be shook out and repotted after disrooting, treating them as advised for the suckers. Any stools with small suckers should have the latter left on until May or June, and then be potted. Old plants from which the fruit and leaves have been cut should be placed close together in any pit having a moderate top and bottom heat, where light and air can be secured so as to have sturdy suckers. Fruiting plants with the fruit progressing will require water more freely and frequently at the roots, examining them about once a week for affording a supply when needed. Recently started fruiting plants must be kept at 65° by night and 70° by day, keeping the atmosphere for these plants and fruiters generally moist by damping the paths, watering as required with tepid liquid manure.—PRACTICE.

The Fatal Bloom on the Fruit.—Schnirer reports the results of an examination showing the danger of eating fruit without first washing it. While at work one day in Weichselbaum's laboratory he sent for some Grapes to eat. The fruit had been kept for some time in a basket outside the laboratory, and was covered with dust, so that the water in which it was washed was black. On examining this, Schnirer reflected that, inasmuch as the neighbouring street was traversed by consumptive patients going to the clinic, the dust might contain tubercle bacilli, and to settle this, he injected into three guinea-pigs 10 c.c. of the water in which the Grapes had been washed. One animal died in two days, the two others died on the forty-eighth and fifty-eighth days respectively, the latter presenting marked tuberculous lesions, especially at the place of injection. The water in which the Grapes had been washed was taken from the faucet, and the glass containing it had been sterilised; neither the boy who had brought the Grapes, nor the merchant who had sold them, was consumptive. The cause of infection was beyond doubt the dust on the Grapes. This danger was recognised long ago by Pasteur. One day at a large family dinner he called attention of those present to the danger of imbibing germs while eating fruit, and to impress the necessity of caution upon his hearers washed his bunch of Grapes in a glass of water. After he had finished the Grapes and had forgotten his little speech, being thirsty, he drank from the glass in which the Grapes had been washed, thereby arousing much merriment among the irreverent youngsters present.—("Medical Record.")

Fair Daffodils.

It is easy to-day to say what flower the Daffodil is, but not by any means easy to determine what folks three or more centuries ago thought it was. The word itself has caused no end of trouble to philologists, and whether derived from "Asphodel," or old English "Affodyl," or French "d'Affrodyle," each one in making a choice will find himself in good company. Lyte, who is generally a safe guide to follow, names four "Affodyls or Daffodils,"—the "male" (*Asphodelus albus*), the "yellow" (*A. luteus*), the "female" (*Ornithogalum pyrenaicum*), and the "white" (*Narcissus poeticus*). Mr. Henslow the latest writer to tackle the matter, refers it in "Medical Works of the XIV. Century" to *Asphodelus*, and perhaps no better origin than that has yet been found. But though Lyte makes the Affodyl and Daffodil interchangeable, in a book of medical recipes somewhat near the date when he wrote, a warning is given that "you must be careful that you take not Daffodil for Affodil," from which, and from other remarks, one gathers that the Affodil of apothecaries was either *Asphodelus* or *Ornithogalum*, and Daffodil the Poet's *Narcissus*. The Daffa-down-dilly was one of the favourite flowers of Spenser, and of other Elizabethan poets, and by them the name was crystallised into English, though for a long time after, as appears from a line of Dryden:—"The short *Narcissus* and fair Daffodil."

The common Daffodil of to-day had not yet appropriated the designation. Parkinson, who attempted to classify the family, and who complained that the true Daffodils, among which he included the incomparabilis section, the now well-known Sir Watkin being even then in existence, had been mixed with the "pseudos" or bastard Daffodils, strangely enough admitted as true Daffodils, *Sternbergia lutea*, *S. Clusiana*, and *Amaryllis Jacobæa*, and placed *Pancratiums* closer even than these.

We have been afforded one or two glimpses of the names by which the flowers were known previous to their having appropriated those of other plants. They are twice referred to in "The King's Quhair" as "*Jonettis*," not improbably the same as the old French "*Janette*;" and "*Primerose Peerelesse*" is also a very old designation. Then while the yellow *Asphodel* was yet the yellow "Daffodil," the *Pseudo-Narcissus*, which by-and-by obtained that name, was known as "*Crowbel*" and "*Yellow Crowbels*."

The beauty of the flowers with their delightful scent caused them to be selected as one of the garland flowers in so much request at one period, and no doubt for this purpose alone they would be largely cultivated in old English gardens. Both Spenser and Shakespeare named them as garland flowers, and the latter as a flower to make nosegays. The roots, moreover, were used in medicine.

As a garden plant they were, in not a few varieties, in cultivation before the time of Gerard, and when Parkinson wrote they were highly esteemed, thereafter sinking into a less prominent position, Evelyn, for example, naming only five kinds; and it is only in these late times that the enthusiasm exhibited by the florists 300 years ago has been revived and their lists of cultivated sorts outrivalled. The bulbs were planted at that early date in the beds reserved for the choicest flowers, and their idiosyncracies were so well known that Parkinson says the bulbs could be kept out of the ground till the New Year, and if planted then would succeed; also that it is one of the few bulbous plants that may be lifted when coming into flower without seriously endangering their welfare.

When wildernesses came into fashion Daffodils formed one of the subjects that were used to plant among the trees and shrubs, and it is no doubt to this custom that in old places colonies of *Narcissus* have been found established. It was in one such situation that the great Incomparable Daffodil (Sir Watkin) was discovered. How long it had been lost to cultivation is difficult to say, though a beautifully etched figure of the flower appeared as late as 1759 in "Elen." The varieties of *Tazetta* have long been cultivated as pot plants; *Soleil d'Or*, for instance, being a very old variety. In the seventeenth century it was the custom of Dutch growers to bring over to England annually a stock of these and other bulbs for sale. Good in one way,

its effect was to limit the number of sorts cultivated to those that it best paid the Dutchman to produce for sale, and so the home grower contented himself with these, meanwhile forgetting that dozens of equally beautiful sorts more easy to cultivate were being neglected.

These *Polyanthus Narcissus*, however, besides being forced in pots, were also largely grown in beds in the flower garden, and we find *Soleil d'Or* and *Bzeman major* recommended as good sorts to grow in water, though others of the same section were also amenable to treatment of a like nature, from which it would appear that water culture for *Narcissus* is not so novel as many might naturally suppose.—B.

Royal Horticultural Society.

Drill Hall, March 26th.

THE meeting of the Royal Horticultural Society on Tuesday last was of an exceedingly interesting character. The morning had a record of 16° of frost in various districts around London, but the cold

did not deter the nurserymen and private growers from sending their best plants, and plenty of them too. Sunshine, coming after the previous day's fearful storm and snow, quite brightened the appearance of everything, and the usually dull atmosphere of the Drill Hall was well illuminated, and for once did justice to the flowers.

Orchids were not so numerous by about half, compared with that of the previous meeting on the 12th of the month, but seldom has better all-round quality been displayed. Messrs. Hugh Low & Co., and Messrs. Veitch and Sons, Ltd., were the principal exhibitors. Sir Trevor Lawrence, Bart., had kindly furnished a basket of "inconspicuous flowered Orchids" to illustrate the essay which had been prepared by his Orchid grower, Mr. W. H.

Young, on this subject. It was also exceedingly kind of the president to undertake to read Mr. Young's paper, as the latter was suffering from a severe sore throat.

Of course spring flowers, including a wonderfully fine exhibition of *Hyacinths* from Messrs. Cutbush & Son of Highgate, were very strongly in evidence. Most of the leading hardy plant growers had brought collections of seasonable plants, all of which were a source of great pleasure, while some new and interesting subjects appeared here and there. Miss Willmott, for instance, had a lovely little Himalayan Primrose in pots, which certainly drew all the fanciers around it, as well as a batch of artists with their pencils, and the general visitors, without knowing that it was rare or unique, all stopped to admire the lovely little gem. A note appears about it in our list of the plants certificated.

Stepping over to Messrs. Wallace & Co.'s stand, one found a large assortment of the early bulbous *Iris*es, dwarf *Narcissus*, especially *N. pallidus praecox*, *Saxifragas*, and *Fritillarias*. The latter caught everybody's eyes, and well worthy were they of the encomiums bestowed on them. *F. pudica* was exceedingly sweet with its golden drooping corollas. Here also was shown a new dwarf Tulip—*Tulipa Korolkowii* bicolor, which received an award of merit (see certificated plants). This species is very dwarf and small.

In the afternoon forty-two new Fellows were elected.

The Fruit and Vegetable Committee

awarded a cultural commendation to the Earl of Ilchester (gardener, Mr. C. Dixon), Holland House, Kensington, for a dish of *Beurré Easter*



NARCISSUS INCOMPARABILIS SIR WATKIN.

Pear. Three dishes of Apples were shown. Those who attended the Fruit Committee were: George Bunyard, Esq. (in the chair); with Messrs. Henry Esling, Jos. Cheal, W. Bates, S. Mortimer, Alex. Dean, Geo. Kelf, James H. Veitch, Chas. Herrin, Wm. Fyfe, E. Beckett, G. Reynolds, A. Ward, G. Wythes, G. Norman, J. Willard, W. Farr, Rev. W. Wilks; and H. Balderson.

The Floral Committee

was out in full strength on Tuesday. Those present were: W. Marshall, Esq. (in the chair); with Messrs. Ernest H. Krelage, H. B. May, H. S. Leonard, Chas. T. Druery, R. Dean, E. Molyneux, H. J. Jones, J. F. McLeod, Jas. Hudson, J. Jennings, Wm. House, Chas. Jefferies, C. R. Fielder, J. Fraser, Chas. Dixon, C. J. Salter, Charles E. Shea, Herbert J. Cutbush, R. C. Notcutt, Geo. Gordon, Chas. E. Pearson, W. Wilson-Ker, W. P. Thomson, E. H. Jenkins, Wm. J. James, Harry Turner, and Geo. Paul. The awards made by this body are given a few lines down.

From Mr. John Odell, Hillingdon, Middlesex, came a batch of *Cyclamen latifolium*. Mr. John Russell, of the Richmond Nurseries, came forward with an extensive and very fine display of forced hard-wooded plants. The standard *Wistarias* and *Prunus triloba* contrasted splendidly with the graceful *Forsythias* at the back part of the group. Sixty or seventy fine specimens of hybrid *Azaleas* also lent their brilliance to this effective group. *Viburnum plicatum* and *Spiraea confusa* should be taken note of for early forcing purposes.

Messrs. B. S. Williams & Son, of Upper Holloway, London, had a neighbouring group to that of Mr. Russell's, in which were some fine standard *Lilacs*, *Staphylea colchica*, *Pyrus floribunda*, and Japanese Maples. Hardy flowers, including *Adonis amurensis*, *Irises*, *Saxifragas* and *Pæonies*, came from Messrs. Geo. Jackman & Son, of Woking. Messrs. J. Peed & Son sent a miscellaneous group of forced plants.

A handsome bunch of *Asparagus Sprengeri*, with scarlet berries, was upon the front Orchid table, having been sent from Osterly Park Gardens, Isleworth, to show its beauty in this state. A lovely selection of *Violets*, in more colours and forms than ever we have seen amongst these flowers, was sent by Messrs. Isaac House & Son, Westbury-on-Trym. The St. George's Nursery Co., Hanwell, had a greatly improved strain of crested *Cyclamens* on view; and Messrs. Cannell & Sons, of Swanley, had an effective table of *Primula obconica* Rose Queen, whose flowers are a deep lilac-rose hue. This variety is one of the finest we have ever seen. M. Lucien Linden, of Brussels, staged a group of *Hæmanthus* species and vars., whose presence was a feature of the hall. Messrs. Veitch showed a splendid exhibit of *Cineraria polyantha*. Many of the flowers of the plants in this group are taking on the Cactus form, with fluted petals.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the chair); with Messrs. James O'Brien, de B. Crawshaw, R. Brooman White, H. M. Pollett, Jas. Douglas, E. Hill, H. Ballantine, H. Little, Walter Cobb, Frank A. Rehder, H. J. Chapman, W. H. Young, F. J. Thorne, J. W. Odell, H. T. Pitt, and Jules Delerom.

There was a most interesting display of Orchids, which was a matter for some surprise, as there were 12° of frost in the early morning. It is probable that had the weather been mild and fine the collections would have been much larger. Messrs. J. Veitch & Sons, Ltd., Chelsea, staged a miscellaneous collection of admirably grown plants, including *Dendrobiums* *Wardianum*, *Aspasia*, *barbatulum*, *Wiganie*, *sosius*, *Wardiano-japonicum albidum*, and *Alepepe*; *Cymbidiums* *eburneo-Lowianum*, and *Lowianum*; *Epidendrum elegantulum*, *E. clarrisa*, *Chysis Sedeni*, *Oncidium sarcodes*, *Lælio-Cattleya Pallas*, *L.-C. Myra*, and several others.

Dendrobiums were magnificently contributed by Messrs. H. Low & Co., Bush Hill Park, Enfield. There were some splendid flowered plants of *Wardianum*, *nobile*, and several hybrids with *barbatulum*, and a well-flowered specimen of *D. nobile album*. *Lælia Jongheana* was also shown in this group. Mr. G. E. Day, gardener to H. F. Simonds, Esq., Woodthorpe, Beckenham, sent four beautiful plants of *Dendrobium infundibulum*. The well-grown plants carried numerous chastely beautiful flowers.

Mr. W. Wotton, gardener to R. I. Measures, Esq., Ladymead, Sussex, staged *Cypripedium Zens*. Mr. R. Etty, gardener to D. O. Drewett, Esq., Willow Wood, Riding Mill-on-Tyne, showed *Cypripediums* Robert Etty and Juno. Mr. A. J. Keeling, Bingley, Yorks, sent *Lælia Jongheana*, Keeling's variety—a richly coloured form. Mr. W. Cobb, Tunbridge Wells, sent *Odontoglossum triumphans dulcotense*—it is a good dark form—and *O. crispum Elamii*. Mr. G. Whitelegge, gardener to J. Bradshaw, Esq., The Grange, Southgate, staged *Cattleya Trianae* Mafeking and *C. T. Empress of India*.

Mons. Jules Hye, Leysen, Belgium, contributed a superb plant of *Odontoglossum crispum* Franz Mazereel. This is well known as a magnificent dark variety, and the plant indicated carried a spike of thirteen blooms. M. J. Hye also sent *Lælio-Cattleya Myra Etoile d'Or*. Mr. W. H. Young, gardener to Sir Fred. Wigan, Bart., Clare Lawn, East Sheen, showed *Lælio-Cattleya Digbyano-Trianae* and *Cattleya Cecilia*, both very handsome flowers. Mr. C. J. Salter, gardener to Mrs. Haywood, Woodhatch Lodge, Reigate, sent *Dendrobium splendidissimum* Mrs. Haywood, a superb dark flower; and *D. Ainsworthi* Virgil.

Mr. W. E. Humphreys, gardener to A. H. Smee, Esq., The Grange,

Carshalton, sent *Lælio-Cattleya Pallas* to show differently coloured flowers on the same spike. The same grower sent *Scuticaria Hadweni*. Mr. E. Kromer, Bandon Hill, showed a very dark form of *Lælia Jongheana*, named Kromeri. Messrs. Linden, Brussels, contributed *Phalaenopsis grandiflora*, *Borneensis citrata* and *rosea*, both very beautiful. Mr. W. H. White, Orchid grower to Sir Trevor Lawrence, Bart., Burford Lodge, Dorking, exhibited a grand spike of *Odontoglossum crispum purpurascens*; it carried ten finely coloured blooms. Messrs. F. Sander & Co., St. Albans, sent *Odontoglossum crispum* Sunshine, *Dendrobium nobile Wardianum*, and several forms of *Phaius Normanii*. Mr. W. Stevens, gardener to W. Thompson, Esq., Stone, Staffs., sent *Odontoglossum crispum* Victoria Regina. This was superb; the spikes carried twelve flowers.

The Narcissus Committee

sat for the second time this season. Those present were: C. Scrazz-Dickins, Esq. (in the chair); with Miss Willmott, and Messrs. George Engleheart, S. Eugène Bourne, A. Kingsmill, R. Sydenham, W. F. M. Copeland, Geo. S. Titheridge, G. Reuthe, P. Rudolph Barr, Walter T. Ware, and W. Poupard. They awarded a silver Flora medal to Messrs. Barr & Sons, King Street, Covent Garden, and another to Messrs. Thos. S. Ware, Ltd., Hale Farm Nurseries, Feltham, for groups of *Narcissi*. Mr. Robert Sydenham, Tenby Street, Birmingham, received a vote of thanks for a small group of *Daffodils*. In Messrs. Barr and Sons' selection was *C. J. Backhouse*, with its apricot trumpet and deep sulphury yellow perianth, and next to it six or eight bunches of the silvery *Leedsii amabilis*. Sir Watkin also found a place among other varieties of the incomparabilis section, while the beautiful snow white Poet's *Narciss*, and the old fashioned Butter-and-Eggs variety were here in large masses. *Irises*, *Snowdrops*, dwarf *Fritillarias*, and other hardy plants graced this interesting table.

The peculiar and handsome *Iris iberica* was shown by Messrs. Thos. S. Ware, Ltd., and amongst other hardy plants of more refined grace were the *Primula verticillata*, *Scilla siberica alba*, *Chionodoxa grandiflora*, and *Saxifraga apiculata*. This long table of hardy plants was indeed exceedingly attractive, backed up as it was by *Narcissi* and *Daffodils* in pots, and over these again could be seen Captain Holford's handsome and brilliant *Hippeastrums*. These *Hippeastrums* filled the whole length of one of the long tables. Undoubtedly they proved that Mr. Chapman, Capt. Holford's head gardener, is thoroughly master of their culture. Self-coloured varieties, with numerous netted and striped ones, were here in ample selection, and all in first-rate form. The colouring of such as *Quadroon*, especially when the sun streamed down upon it, was simply glorious. A week's longer growth would have made a difference on the size of the blooms, but they were amply large enough as it was.

MEDALS.—Orchid Committee: Silver-gilt Flora to M. Jules Hye, Gand, for *Odontoglossum Souvenir Franz Mazereel*; to Messrs. Jas. Veitch & Sons, 544, King's Road, Chelsea, for group of Orchids; to Messrs. Hugh Low & Co., Bush Hill Park, Enfield, for group of Orchids. Floral Committee: Silver-gilt Flora to Mr. John Russell, Richmond, Surrey, hardy flowering shrubs; to Capt. Holford, Tetbury, Gloucester, for *Hippeastrums*. Silver Flora to the St. George's Nursery Co., Hanwell, for *Cyclamen*; to Messrs. W. Cutbush & Son, Highgate, for *Hyacinths*; to Messrs. R. Wallace & Co., Colchester, for bulbous plants; to M. Lucien Linden, Brussels, for *Hæmanthus*. Silver Banksian to Messrs. B. S. Williams, Upper Holloway, for forced plants; to Messrs. J. Veitch & Sons, Chelsea, for *Cinerarias*; to Messrs. Cannell & Sons, Swanley, for cut flowers; to Messrs. Jackman & Sons for hardy flowers, and to Messrs. I. House & Son, Bristol, for *Violets*.

Certificates and Awards of Merit.

Tulipa Korolkowi bicolor (R. Wallace & Co.).—A most charming little species. The colour is bright yellow with rose in the centre of the segments, which are tipped with green (award of merit).

Lælia Jongheana Kromeri (E. Kromer).—A grand form of the type; the colour is particularly rich (award of merit).

Hæmanthus Queen Alexandra (L. Linden).—This is a beautiful soft flesh-coloured form; the individual flowers are very large (award of merit).

Hæmanthus fasciatus (L. Linden).—A beautiful salmon rose of fine form and large size (first-class certificate).

Hæmanthus mirabilis (L. Linden).—One of the handsomest we have seen; the colour is rich salmon orange (award of merit).

Odontoglossum crispum purpurascens (W. H. White).—A most handsome crispum; the varietal name describes the ground colour. The whole flower is profusely spotted with bright brown (first-class certificate).

Amaryllis Lord Boringdon (A. Chapman).—A magnificent crimson self. The flower was of perfect form (award of merit).

Amaryllis Clovelly (A. Chapman).—An attractive light form. The ground colour is white and the marking rose (award of merit).

Lachenalia Phyllis Paul (F. W. Moore).—A handsome variety; the colour is very deep yellow (award of merit).

Lachenalia Kathleen Paul (F. W. Moore).—A lovely variety; the colour is yellow, with brilliant rose and soft green (award of merit).

Rhododendron grande (M. Moody).—A most handsome truss; the colour is cream with rose on some of the flowers (award of merit).

Primula megasafolia (Miss Willmott).—A dwarf growing *Primula* with deep rose-purple elegant flowers (award of merit).

Young Gardeners' Domain.

His First Charge.

THE Editor has an eager eye for all that savours of interest and encouragement to young gardeners, and when by chance he got hold of the following letter he thought—well, this will just please “An Old Boy” and all the younger “boys” who read the notes in this “Domain.” “Old Boy” has, in common with other correspondents, from time to time described the young gardener’s feelings and difficulties on assuming his first headship. But without delaying my readers longer I will herewith present the letter, which so naïvely describes the state of one young gardener on taking up his first charge, and who, no doubt, will rub his eyes when he sees where his letter has got to. He writes to his friend as follows:—

It is a week or two since I made the acquaintance of L—, and now can express an opinion of its merits or otherwise. I am afraid the first few days I was very much disappointed with it, and wrote something in that strain to Mr. —, but now in a more sane mood I think very much better of it, and think that after all I may not have done so badly. I find that, as a rule, both people and things improve on acquaintance. I know when I went to W— I thought I should not have stayed three months, and had I left it I know I should have regretted the fact ever after, as both W— and Mr. — have turned out two of my best friends. I do think this will prove a most comfortable place; everything points to it. The lady is most kind and thoughtful in many ways. I do not anticipate any difficulty in pleasing her—rather sanguine, you will say, in the case of a lady. Mr. G— is a typical Norfolk squire. His hobby is breeding thoroughbreds, and for other recreation saws and cleaves wood sufficient for the household, and at eighty hunts three or four days a week. I may say that whilst cleaving wood he finds his lungs sufficiently strong to sing as well, but perhaps this may only be when an awkward piece comes to hand. Wise man he! Another form of recreation he occasionally indulges in is sprinting behind the carriage coming home from church on Sunday mornings, and in summer plays tennis. Isn’t it wonderful? I thought him a feeble old gentleman, but think differently now. The squire takes no interest in the garden, except that he is fond of fruit. This is a very large estate indeed, but the “style” throughout is very different to W—.

The flower garden is the best feature of the place. It will be very pretty, I imagine, when at its best. There is much bedding, formal and otherwise. The glass houses are about as antique a lot as could well be imagined, although they are in fair condition. I have had considerable insight into horticultural building whilst living at W—, but not until now did I realise the number of ingenious contrivances there are for effecting ventilation. I have had personal acquaintance with gearings worked with a crank, but I certainly think some of these here must have been invented by one. What a utilitarian age that must have been when a 4-inch wire nail, driven to the hilt, formed part of the apparatus for closing a ventilator—or, rather, for keeping it closed. Such an idea would never have occurred to my unpractical mind. It is at once cheap and effective. The vinery is span-roofed, and of about the same dimensions as my bedroom. I believe they cut some Grapes from it; I should hardly have thought it possible! The Peach trees inside are fair, but the house is crammed full with other plants. We have an interesting collection of scented-leaved Pelargoniums; I wonder if friend S— or you could get them named for me? Cyclamens are good as regards flowers, both as to size and quantity, but the plants themselves are not so fine. There is a fair quantity of wall fruit, but the trees have not received the same attention as at W—.

I wish the kitchen garden was twice the size, as with a little more labour it could then be made a very creditable affair. The soil is first-class, both in quality and depth. I should particularly have liked to have made it the feature, but Mrs. G—’s sympathies do not lie in that direction, so I must follow her lead. Perhaps it will be to my permanent good that I have to give the artistic side first place, but I must say that until now, at any rate, my inclination has not been that way, and except in a very constricted fashion I have never given it any consideration. We are much later here than in Devonshire; the ground is not yet sufficiently dry for seed sowing. I am anxious to sow Peas and Beans, but cannot tread the ground yet; I can see already that with this soil it must either be early or late digging. The ground turned up last week is already much drier than that dug before snow fell, but I think, with less in particular, that late digging is not to be recommended. I am having the Celery quarters, which are cleared, dressed with wood ashes, and turned back ready for Shallots, Leeks, Parsnips, and Beet. Spring-sown Onions we grow few or none. I am much happier now than I was the first week here. I really felt like “bolting” then if I had not set about doing something. The gardener’s house is not yet ready for me, but I am in first-rate quarters, and a week or two hence the same adjective should be equally applicable to my “condition.”

Manx Forest Fire.—On Thursday morning, March 21st, a destructive fire broke out in the forest of Glen Helen, Isle of Man, and consumed 60 acres of timber. Glen Helen is a popular tourist resort.



Fruit Forcing.

Melons.—Aim at securing stout, leathery leaves, and short-jointed growths, for such plants usually produce heavy, highly flavoured fruits, while plants with thin foliage and long-jointed wood produce soft, light (for size), and indifferent flavoured samples. No effort should be spared to induce solidification, as this is essential to fertility, and with it there is little difficulty in getting fruit to set on the first laterals. When in flower, and during the setting period, water should only be given to prevent flagging, and the atmosphere must be kept drier, with an increase of temperature of about 5°, a circulation of warm air conducing to a good set, and if necessary a little air should be admitted at night to prevent the deposition of moisture on the flowers. Fertilise the fully expanded pistillate blossoms every day, and pinch each growth at the same time one joint beyond the fruit. When the fruits are set and about the size of a hen’s egg give a thorough watering of tepid liquid manure, having the soil for earthing the roots warmed, for if the roots are chilled by cold water or soil the fruits turn yellow instead of swelling. In a day or two top-dress with rich, turfy rather strong loam, pressing it down firmly, and again supply water. Stop the subsequent growths to one or two leaves, and avoid overcrowding the foliage by removing superfluous growths. The bottom heat should be kept steady at 80° to 85°; this, assisting the swelling of the fruits, and speedy growth with early ripening, is a great point in growing the first crop of Melons.

Syringe the plants moderately about 3 P.M. on bright and warm afternoons, or soon after midday when the air is sharp. Damp the floor in the morning, and keep the evaporation troughs charged with liquid manure, or failing these sprinkle the floor with stable drainings diluted with five times the bulk of water, unless sufficiently diluted by water running into the tank. Liquid manure will be needed by plants in restricted borders, and a mulching of rather lumpy and sweet manure encourages roots and affords support. Water, liquid manure, and mulching must always be applied equal to or in advance of the temperature of the house.

Later plants will need the growths trained regularly, removing the laterals on the stem up to the trellis, then rubbing off every alternate lateral directly they are perceived, leaving the rest on the right and left of the main stem, pinching the point out of the primary stem after it has extended two-thirds of the required distance. Increase the supply of water as the days lengthen, but avoid making the soil too wet, as that hinders root action, and secure a genial condition of the atmosphere by damping in the morning and lightly syringing on fine afternoons.

Sow seeds to raise plants for occupying small houses or pits as they become cleared of bedding plants, keeping the seedlings sturdy by growing near the glass, and not allowing them to become very much root-bound. In pits and frames a bottom heat of 80° should be maintained where the plants are growing freely; newly made beds will have a bottom heat of 90°, which is safe for planting out, and as the heat declines it can be increased by renewing the linings, employing thick night coverings over the lights.

Vines.—*Earliest Forced in Pots.*—The canes started last November that have been duly attended to are now ripening the Grapes. The supplies of nourishment and water at the roots should be lessened gradually, so as not to give a check, and the atmospheric moisture must be reduced, yet not withholding it entirely. Maintain a temperature of 60° to 65° at night and 70° to 75° by day, keeping between 75° and 85° from sun heat, ventilating freely in favourable weather.

Early Houses—In the house started in December the Grapes are rapidly advancing towards the colouring stage, and should be afforded due, but not excessive, supplies of liquid nourishment. A light mulching of short sweetened stable manure maintains an even moisture in the soil, in which, however, there must not be any deficiency, as it is important that the Grapes be kept plump and the foliage healthy. Damp the paths and borders at closing time until the fruit is well advanced in colouring, after which reduce the moisture gradually, and provide a circulation of warm air day and night. This is all that is usually necessary to prevent Madresfield Court and other Grapes from cracking; it is also an excellent preventive of “spot.”

Vines Started at the New Year—When the Vines come into flower afford a circulation of rather dry air, with a temperature of 65° to 70° at night for Black Hamburg and similar varieties, and 70° to 75° for Muscats. All shy setting kinds should have the bunches lightly gone over with a large camel’s-hair brush, to remove the caps and the glutinous substance sometimes too abundant, choosing a warm part of the day, after the house has been freely ventilated, and fertilise them gently with pollen from a free-setting variety. When the berries are fairly set Black Hamburgs and similar sorts may be thinned, but

Muscats and other shy setters should be left until the roughly fertilised berries take the lead in swelling.

When the Grapes are set afford top-dressings of fertilisers, striving to get a good swelling in the berries during the short time that elapses before stoning commences. In the case of open borders a light mulching of sweetened material is of essential service in maintaining uniform moisture. Admit air early and liberally as the heat increases, striving to secure stont, short-jointed wood, thick, leathery leaves, and tough elastic skins to the berries. Close early with abundance of atmospheric moisture, retaining 85° to 90° well on towards evening from sun heat, and allow the night temperature to fall to between 60° and 65°.

Succession Houses.—Disband when the best shows for fruit can be discerned, leaving only growths for which there is space, to allow the foliage full exposure to light with a margin for lateral development. Tie down the shoots before their points reach the glass, and pinch one or two or more joints beyond the fruit when the leaf at stopping point is the size of a halfpenny. Stop the laterals at the first joint, and to one afterwards as growth advances, or allow lateral extension where there is room, but only on that condition. Ventilate early, but avoid lowering the temperature, as this chills, and produces crumpled foliage and rust. If the promise is good for fruit afford a top-dressing of an advertised fertiliser, either watering it in moderately or pointing in lightly, but avoid saturating the soil or disturbing the roots.

Late Vineries.—Syringe Vines that have commenced growth two or three times a day, not, however, keeping the rods constantly dripping with moisture, as this induces aerial roots instead of active feeders in the border, closing with a moist atmosphere, in preference to a wet rod, at 75°. Employ fire heat to maintain a temperature of 55°. Vigorous young Vines do not start regularly, therefore to prevent a rush of sap to the upper part of the canes bring these down into a horizontal position, or depressing the points until all the buds have started to the base.

The Kitchen Garden.

Early Celery.—Young plants from seed pans or boxes should be pricked out 4 inches apart on a good bed of soil over a mild hotbed. The gentle heat derived from the bed will give the seedlings a start, maintaining the surface moist by gentle sprinklings of water every sunny afternoon when closing the frame; shade at first from bright sunshine. When established give air daily so as to keep the plants sturdy, and as the weather becomes warmer draw off the lights altogether on favourable days; on frosty nights cover the glass with dry mats. These plants will be ready for the trenches the latter part of May. This is also a suitable time to sow more seeds thinly in pans or boxes for pricking out in beds in cold frames in May, these plants serving to furnish the late crops.

Carrots.—The main crop of Carrots may be sown now, including such varieties as Intermediate and Long Red Surrey where substantial and long roots are required. The ground ought to have been previously well worked and dressed, prior to the sowing preparations, with burnt refuse or wood ashes. Thoroughly break down the soil, making it fine on the surface, and draw the drills a foot apart to the depth of an inch. The seed being very light, a calm day should be selected for sowing, scattering the seed thinly.

Onions.—Autumn sown Onions may now be drawn carefully out of the seed bed or lines where they have stood all the winter, transplanting on good ground 8 inches apart in rows a foot asunder. Do not cramp the roots in shallow holes, but place them straight down in holes of sufficient depth. Young plants raised in boxes from seed ought now to be in process of being hardened to outside conditions, when they can also be planted out. Onion seed can still be sown on rich ground made fine and firm on the surface.

Savoy, Borecole, Broccoli.—Seed may be sown in beds or drills on an open border. Sow thinly, and merely cover with soil, but fix nets above the beds, or the seed will quickly disappear, birds having a special liking for it.

Cucumbers for Frames.—A recently formed hotbed, composed of manure and leaves in equal quantity and thoroughly mixed, placing together firmly, is a suitable medium for raising the necessary stock of plants for growing in frames. When the hotbed has been formed cover with soil, which will keep down any dangerous heat. Fill 3-inch pots with good loamy soil, quite moist, and bury, an inch below the surface, one seed in each pot; give no water, and plunge in the soil in the hotbed. Keep the frame close, shading if strong sunshine is prevalent, and in a few days the seed will have germinated. Allow a little fresh air daily to assist in strengthening the seedlings. When the pots are becoming full of roots plant out on mounds of rich soil, one under each light, after which rapid growth will be made.

Potatoes.—Plant midseason and late Potatoes freely; the general distance between the rows may be 2 feet to 2 feet 6 inches. It is better to draw drills 6 inches deep than to plant with the dibber, especially where the soil may be stiff or heavy. In the latter case spread some burnt refuse and wood ashes along the rows before arranging the tubers, which should be of medium size, placing them a foot or 15 inches apart according to the variety. The strong-haulmed varieties may even need more room every way, and it is an advantage to give it them, as a rule.

Tomatoes.—Where a warm house is available, and plants are ready, place them out in shallow troughs, borders, or pots. They must have a light position in addition to the warmth, so that the advance they make may be of a sturdy character. At first as little soil as possible may be given them; to encourage a strong early growth may prevent the flowering should the growth be sappy. If made in abundance of light, this, however, will make a great difference. As the stems extend rub out the side shoots from the axils of the leaves. For May planting and final potting more young stock should be shifted on into 4 or 5-inch pots. Seedlings, when strong enough, must have their first transplanting, sinking the stems to the seed leaves. When potting or planting finally compress the soil well about the roots.



* All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Sediment from Washings of Sheep Wool as Manure (F. W.).—The article you sent appears "soaper's ashes" compressed in cake. It consists largely of carbonaceous matter, and also contains potash and other saline substances. If it were broken up small it would probably be useful as manure, applying 3½ lbs. per rod, and pointing in lightly. We should first use it experimentally for ordinary vegetable crops, and on a relatively small scale, before having recourse to its use as a general fertiliser, as a similar material that was applied, perhaps too liberally, to kitchen garden ground had bad effects; indeed the article seems more fitted for fuel than manure, as it burns freely, and has a greasy "feel," though this may have been neutralised, otherwise greasy substances have a prejudicial effect on soils for some time after application.

Shamrock (J. D. B.).—The identity of a "true" Shamrock will never be unanimously agreed to. What is said to have been the true Shamrock was sent to the late Queen Victoria from the neighbourhood of St. Patrick's grave at Downpatrick some years ago. What Trefoil was sent we cannot tell, for it seems the plants were not subjected for botanical opinion. Irishmen themselves are not agreed about the Shamrock, for we have had the White Clover (*Trifolium repens*) from Cork, and the Black Medick (*Medicago lupulina*) from Dublin, and both were asserted to be "true Shamrock." The sprig that you send is *Trifolium repens*; and all we can say is, that a very large number of people call this the true Irish emblem. The *Oxalis* (*O. acetosella*) and *Trifolium minus* also find a great many adherents. Most of the varieties of dwarf Clovers are at times called Shamrock. The Sister Isle, however, has no monopoly of any species of Trefoil.

Streptocarpus Leaves Rusted (H.).—The leaves are what is known as affected by "rust," and at one time attributed to fungoid infection, else attributed to various cultural defects. Recent investigations, however, have shown that the rust is caused by a member of the mite family, not unlike a thrips in appearance, and named *Tarsonemus gerani*, or even *T. gloxini*, simply because it affects *Geraniums* outdoors, *Pelargoniums*, especially Ivy-leaved varieties, under glass, and is very destructive to *Gesneras* and *Gloxinias*, also *Begonias*, particularly tuberous-rooted. It does not appear different from *Tarsonemus buxi*, which affects Box leaves. It is very pernicious, the punctures of the pest, and the poisonous nature of its secretions, with the subcutaneous nature of young mites, causing the leaves to become brown, crippled, and even dried up. The creature is rather difficult to eradicate, and is best overcome by spraying repeatedly and consecutively, at intervals of about a week or ten days, with tobacco water, that called "London juice" being diluted with ten to twelve times its bulk of water, or the nicotine compound used for vapourising with about fifty parts of water. The spray should be used so as to reach both sides of the leaves, which is a difficult matter in the case of *Gloxinias* and *Streptocarps*, hence frequent fumigation with tobacco paper, or vaporisation with nicotine compound. Where practical, sponging the leaves carefully with tobacco water is the most effective deterrent and remedy. This procedure requires to be persisted in to effect a complete riddance. In bad cases it is well to remove the affected leaves, and even destroy seriously infested plants, and this has been found in some cases the only effectual remedy. Taken in time, and recourse had to tobacco water as a preventive, the removal of affected leaves is, perhaps, the best means of riddance, and of having healthy plants.

London's "Arboretum et Fruticetum Britannicum" (Alice Baker).—The original price of this great work amounted to a considerable sum. The selling price at present of a complete copy, eight vols., 8vo, half calf, with a MS. letter of the author, is about £3.15s.

Orchid Book (Albert Rowland).—We do not stock the book you ask for, but we might probably secure it for you. The title of it is "The Amateur Orchid Cultivator's Guide Book," price 2s. 6d., by H. A. Burberry (1894), published by Messrs. Blake & MacKenzie of Liverpool.

Pelargonium ("Geranium") Seedlings with Three First Smooth Leaves (Cotyledons) (J. E. C.).—It certainly is not a common occurrence for Pelargoniums ("Geraniums") to come up with three seed leaves or cotyledons, as verified by your experience of several dozen seeds obtained by crossing, the plants from which come up with two leaves, this being the usual characteristic. But in the case of plants under high cultivation and long subjected to cross-fertilisation, as all the improved present-day varieties are the result of, the seed from them, or rather the plants from it, come up with three first or smooth leaves or cotyledons in numerous instances, and the plants are usually of a superior character in vigour of plant, and size and form of flower. It is also not unusual for *Primula sinensis* vars. to have three first or seed leaves, than which perhaps no other species of plant has attained to such a high degree of perfection, partly in result of high cultivation, and partly, if not chiefly, by cross-fertilisation. Numerous other instances could be quoted.

Water from Deep Chalk for Watering Purposes (E. L.).—The water is not generally suitable for garden work, such as syringing and watering in plant and fruit houses, though not prejudicial for watering ordinary crops outdoors or even indoors, but is prejudicial to all plants that require peat soil or have delicate roots, such as Azaleas, Heaths, Rhododendrons, &c. To render the water suitable for watering and syringing with, it should be softened, and is a simple process. A large body can be softened with as little trouble as a small quantity. Anti-calcaire, commonly called milk of lime, is used. To 250 gallons of water add 1 lb. of anti-calcaire, stirring well up, and in twenty-four hours the chalk will be deposited at the bottom of the tank and the water rendered soft. Common washing soda is also good for softening chalk water. Dissolve a quarter of a pound of soda in hot water, add this to 36 gallons of cold, allowing the water to stand as before for twenty-four hours, when it will be soft. While the precipitation of chalk is going on the water has a milky appearance. Where the water is used, care should be taken not to disturb the sediment, and the tank or vessel should be frequently cleaned out.

Names of Plants.—We only undertake to name *species* of cultivated plants; not wild flowers, or varieties that have originated from seeds and termed florists' flowers. Flowering specimens are necessary of flowering plants, and Fern fronds should bear spores. Specimens should arrive in a fresh state in securely tied firm boxes. (W. B.).—1, *Eupatorium ianthinum*; 2, probably a species of *Lælia*, but too poor for identification. (J. J.).—*Tritonia crocata*, very good. (R. T.).—1, *Dendrobium formosum*; 2, *Cypripedium villosum*; 3, *Oncidium altissimum*. (R. Hughes).—1, *Saxifraga apioulata*; 2, *Dædalacanthus nervosus*; 3, *Acacia Drummondii*; 4, *Acacia verticillata*. (A. D.).—1, *Angraecum sesquipedale*. (T. L. Barrow).—1, *Narcissus triandrus albus* (Angel's Tears); 2, *Chionodoxa grandiflora*. (J. W.).—1, *Celsia oreтика*; 2, *Blechnum occidentale*; 3, *Adiantum hirtum*; 4, *Adiantum tenerum*; 5, *Pteris serrulata*; 6, *Adiantum ouneatum* var. [If "J. W." and others, requiring plants to be named, would read and act upon our notice *re* "specimens," and send good workable material, not rubbish-heap scraps, far less trouble and waste of time would be caused in the naming. An hour can be easily spent in verifying a specimen from insufficient material, which would have been recognised at sight had a good representative piece been sent.—ED.] (J. T. F.).—1, *Hibbertia dentata*; 2, *Hamamelis virginica*; 3, *Pelargonium quercifolium*; 4, *Cyclamen Coum*. (F.).—1, *I. reticulata*; 2, *I. persica*.

Phenological Observations.

From Mr. Mawley's Latest Report, 1899.

APRIL.

- 3rd.—*St. Arvans, Monmouth*: Chiffchaf first heard.
4th.—*Chirnside, Berwick*: Sand martins first seen.
5th.—*Chirnside*: Wheatear first seen.
6th.—*Killarney*: A northerly gale accompanied by hail did immense damage to young vegetation; leaves of Horse Chestnut, Hawthorn, and Larch suffered much, while Daffodils in full bloom were destroyed. Wheatear seen at Churt, Surrey. Willow wren seen at *St. Arvans*.
8th.—*St. Albans, Herts*: Blackthorn shedding its blossoms.
12th.—*Bembridge, Isle of Wight*: Cut first Asparagus out of doors.
13th.—*Churt, Surrey*: Wryneck first heard.
17th.—*Killarney*: Potatoes out down by frost.
18th.—*Bassaleg, Monmouth*: Sycamores in full leaf.
20th.—*Berkhamstead, Herts*: Wild Cherry in flower, its average date for previous thirteen years. Cuckoos and nightingales plentiful at Market Weston.
23rd.—*Edgworthston*: Corncrake first heard and sand martin seen.
24th.—*Westport*: Swift first seen. From this date migratory birds are daily recorded from various parts of these islands.

Next Week's Events.

- Friday, March 29th.—Blackheath Horticultural Society meets.
Tuesday, April 2nd.—Scottish Horticultural Association meets.
Wednesday, April 3rd.—Royal Caledonian Horticultural Society's Spring Show (two days).
The Brighton and Sussex Horticultural Society's Show has now been fixed for the 16th and 17th of April.

Trade Catalogues Received.

- Wm. C. G. Ludford, F.R.H.S., Amateur Cactus Grower, Fern Lea, Four Oaks, Sutton Coldfield, near Birmingham.—*List of Cacti and Succulent Plants*.
L'Horticulture Coloniale, Parc Léopold, Brussels.—*Special Illustrated Catalogue of New Plants, 1901*.

Covent Garden Market.—March 27th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, cooking, bush...	5	0 to 7	Lemons, Messinas, case	9	0 to 12
" Californian, case	10	0	Oranges, case ...	15	0
Cobnuts, doz. lb., best ...	4	0	Pears, ½ case ...	14	0
Grapes, black ...	2	0	Pines, St. Michael's, each	2	6
" Dutch, lb. ...	1	6			

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	0 to 3	Horseradish, bnch. ...	1	2 to 1
" Jerusalem, sieve	1	6	Leeks, bunch ...	0	1½
Asparagus (Spruce Grass)	0	0	Lettuce, doz. French ...	1	0
" English, 100 ...	4	0	Mushrooms, forced, lb. ...	0	8
" Giant, bundle ...	15	0	Mustard and Cress, pnnt.	0	2
" Spanish, bundle.	1	9	Onions, Dutch, bag ...	5	0
" Paris Green ...	5	0	" English, cwt. ...	5	0
Batavia, doz. ...	2	0	Parsley, doz. bnchs. ...	2	0
Beans, French, per lb. ...	1	0	Potatoes, cwt. ...	3	0
" Jersey, per lb. ...	2	0	" New Jersey, lb	0	5
Beet, red, doz. ...	0	6	Radishes, doz. ...	0	9
Broccoli, bush. ...	0	0	Rhubarb, doz. ...	1	5
Brussels Sprouts, sieve...	1	0	Savoy, tally ...	4	0
Cabbages, tally ...	3	0	Scotch Kale, per bushel...	0	6
Carrots, doz. bnch. ...	2	0	Seakale, best, doz. ...	14	0
Cauliflowers, doz. ...	1	6	" 2nd, doz. ...	6	0
Celery, bundle ...	1	0	Shallots, lb. ...	0	4
Chicory, Belgian, lb ...	0	4	Spinach, bush. ...	4	0
Corn Salad, strike ...	1	0	Tomatoes, Canary, case	4	0
Cucumbers, doz. ...	3	0	Turnips, doz. ...	2	0
Endive, doz. ...	1	3	Turnip tops ...	0	9
Greens, bush. ...	1	0	Watercress, doz. ...	0	6
Herbs, bunch ...	0	2			

Average Wholesale Prices.—Plants in Pots

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz. ...	12	0 to 18	Ferns, var., doz. ...	4	0 to 18
Acers, doz. ...	12	0	" small, 100 ...	10	0
Aralias, doz. ...	5	0	Ficus elastica, each ...	1	0
Araucaria, doz. ...	21	0	Foliage plants, var., each	1	0
Aspidistra, doz. ...	18	0	Genistas, doz. ...	8	0
Aspidistra, specimen ...	15	0	Geraniums, scarlet, doz.	6	0
Azaleas, various, each ...	2	6	" pink, doz. ...	8	0
Boronias, doz. ...	20	0	Hyacinths, doz. ...	6	0
Cinerarias, doz. ...	6	0	Hydrangeas, white, doz.	18	0
Crotons, doz. ...	18	0	" pink, doz. ...	18	0
Cyclamen, doz. ...	8	0	Lycopodiums, doz. ...	3	0
Dracæna, var., doz. ...	12	0	Marguerite Daisy, doz. ...	8	0
Dracæna, viridis, doz. ...	9	0	Mignonette, doz. ...	6	0
Erica, various, doz. ...	8	0	Myrtles, doz. ...	6	0
Euonymus, var., doz. ...	6	0	Palms, in var., doz. ...	15	0
Evergreens, var., doz. ...	4	0	" specimens ...	21	0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums, doz. ...	4	0 to 5	Mignonette, English, doz.	6	0 to 9
Asparagus, Fern, bunch	1	6	Mimosas, bnch. ...	1	0
Azalea, doz. bnchs. ...	4	0	Narcissus Ornatus, doz.	4	0
Camellias, white, doz. ...	2	0	" Campernelle, "	1	0
Carnations, 12 blooms ...	1	6	" Soliel d'Or, "	1	0
Cattleyas, doz. ...	10	0	Odontoglossums ...	4	0
Daffodils, doz. bnchs. ...	2	0	Primroses, yellow, doz. ...	1	0
Eucharis, doz. ...	2	0	Roses, Niphetos, white,		
Freesia, doz. bnchs. ...	1	6	doz. ...	1	0
Gardenias, doz. ...	3	0	" yellow, doz. (Perles)	2	0
Geranium, scarlet, doz.			" red, doz. ...	2	0
bunches ...	6	0	" Catherine Mermet,		
Hyacinths, doz. bnchs. ...	8	0	doz. ...	3	0
Lilium lancifolium album	3	0	Smilax, bunch ...	3	0
" rubrum ...	3	0	Spiræa, doz. bnchs. ...	4	0
" longiflorum ...	4	0	Stock, white, doz. bnchs.	1	6
Lilac, white, bunch, ...	3	0	Tulips, yellow, doz. bnchs.	6	0
Lily of the Valley, 12 bnchs.	8	0	" white, " "	8	0
Maidenhair Fern, dozen			" red, " "	4	0
bunches ...	4	0	Violets, single, doz. bnchs.	0	9
Marguerites, white, doz.			" double, doz. bnchs	1	6
bnchs. ...	3	0	" Star, " "	1	6
" yellow, doz. bnchs.	2	0			



Advance in Rural Teaching.

THE Education Department, before formulating the new code in 1896, sent a deputation to pay a special visit of inspection to a remote Yorkshire village school. This was Stanbury, near Haworth, and very proud must Mr. Bradley, the master, have been to think that his pioneer efforts to give a practical side to the teaching in his school was being appreciated by those in authority. It was in connection with "science" that Mr. Bradley made his new departure. By "science" the department means the teaching of some simple facts of heat and chemistry; but Mr. Bradley, being a naturalist, was not satisfied with teaching his pupils a few dry elementary principles, he gained the sympathy of the local inspectors, and carried his teaching into the open air, Friday afternoons being devoted to a natural history expedition into the highways, fields, and hedgerows. Every phase of Nature, as visible to the eyes of the master, aided largely by the magnifying glass or microscope, has been made an object lesson to the scholars of Stanbury. Botany, and the numerous 'ologies included under the head of natural science, have been elementarily taught in such a way as to thoroughly interest the children, and their general knowledge of these subjects is now such as would greatly astonish experienced naturalists.

We sincerely hope that the success of Mr. Bradley will encourage the education authorities to enlarge and extend the application of this practical side of rural education, and we repeat what we have previously urged, that village schools should be taken into the fields and the why and wherefore of farming operations pointed out to them, with such scientific explanations as are suitable. It may be urged that schoolmasters have enough to learn without studying scientific agriculture, certainly if he is to teach all that is needed at a large town school; but the needs of town and country are so different that country schoolmasters must have a special training, with a view to best instructing their pupils in matters useful to country life, and must follow their profession as expert rural teachers. The old system of book learning was instruction only, pure and simple; the new will be true education, bringing out through the lessons of Nature the gifts and talent which by nature each pupil possesses, not in common, but in such various degrees.

Estate Reform.

It is not to point out the need for further buildings, drainage, or such kindred matters that the above heading is used; but under it we wish to call attention to an economic waste that is very largely in evidence all over the country, and especially where large estates have by slow degrees absorbed smaller ones. The reference is to the inconvenient sandwiching of one farm with another, although both belong to the same owner. How often do we hear that recommendation given to a holding, "It is in a ring fence?" Alas! very seldom; and when all the drawbacks of having a farm scattered all over a large parish are fully taken into account, it will be seen how desirable it is that holdings should be made more compact. Firstly, they would contain a minimum of boundary fences, and disputes and soreness between neighbours as to the proper responsibility for damage by straying stock would be reduced to the least possible compass. Secondly, shepherding would be made much easier; much time would be saved in going round the various fields, and the stock could be visited earlier and later, as well as at shorter intervals. How often this would mean the saving of valuable animal lives every farmer knows well. Thirdly (and here lies the greatest economy), how great a saving of carting there would be between having the furthest corner of the furthest field but half a mile away from the premises as would occur in a 500 acre farm in a ring fence; and in a similar acreage such as we have had experience of, three and a half miles long, varying in width, but with huge gaps in the nearer portions, and a large proportion (two-thirds) more than a mile from home?

Carting Corn into the stackyard, carting manure back to the fields, the time of horses and men making their way to work, for the time so spent is at the farmer's cost, if strictly valued and taken into account would soon run up to the amount of a moderate rent, and yet tenants, and with good cause, complain of the difficulty of paying rent, and landlords with equal truth of the small nett return from landed property, and the great difficulty of granting further remissions. And this waste is in the most serious item of expenditure, and in that commodity which the farmer finds most difficult to obtain—i.e., labour; and that there is not likely to be much future ease in the agricultural labour market is the firm opinion of some of our wisest heads.

Of course there are many difficulties in the way of reform in this matter. Compact farms are easier to talk of than to bring about, landlords have a natural and laudable desire not to disturb and harass old tenants; whereas in some, we might say many parishes, the land varies very much in quality, and there is some advantage in fairly apportioning the best land. This is practically the only argument in favour of wide farms, if we except the necessity to provide a suitable proportion of grass. But is there anything really gained by it? and would it not be better, where the situation of the several farmsteads will allow of it, to make, say, one good compact farm which everyone would want and would command a high rent, one medium farm which would be as good as any of the previous mixed ones, and more desirable because more handy, and one moderate or bad farm which, being also handily shaped, would let for all it is worth, than to have three farms mixed up higgledy piggledy and workable only at the highest possible cost? Supposing a landlord owning a large park, say 2000 acres, containing good land at one end, medium in the middle, and poor at the other extremity, were to turn it into four farms, would he build his homesteads so as to make each holding self-containing, or would he mix them up, as so many farms are now? Need we ask the question? It may not be convenient to make startling changes at any time, but opportunities occur when farms naturally change hands, and new blood has to be introduced, when economic changes such as we have indicated might very usefully be made. The land must be made the best of before its cultivators can claim outside sympathy for loss and failure.

Work on the Home Farm.

We are very thankful not to be farming strong land at the present time, for two or three days of fine drying weather have been but a promise of better things, and the weather is again cold and wet. Cold northerly winds, with constant showers of sleet or cold rain, are not encouraging when we had hoped to see the drill at work in clouds of March dust. It is not pleasant to be continually prophesying evil things, but certainly the month of March has not been such as usually precedes a good farmer's year. A dry windy March, a showery April, dry May, and dripping June, are ideal months, and a combination of them is always favourable to agriculture. Very little spring Corn has been drilled, and it is useless to think of it until the weather alters for the better, the only land where drilling is possible being such as is not usually sown until April.

We see horses at work using the cultivator. It may do good by keeping the soil open and assisting drainage, but that is the only advantage to be gained. The difficulty with even medium land that has had sheep upon it is to get it ploughed at all without doing more harm than good. Of course it may be broken up with the cultivator, and ploughing altogether dispensed with, but we doubt the reality of any economy in so doing, and we would rather exercise a little more patience. Some of the best crops of Barley we remember were sown in mid-April, and though we should prefer March sowing with a good seed bed, we had better wait until after Easter than put the seed in badly now.

The spring sales, though late, are here at last, and it is quite remarkable what very moderate prices are being made of ewes and lambs; we thought things would alter after the first sale or two, but the price appears to have been set, and so it remains. It is not so many years since ewes and pairs were making £5 each and singles £4. Wool was a little dearer then, but mutton hardly as dear as now. Why is it, then, that they are only worth two-thirds of that price with the best prospect for spring and summer keep that any of us can remember? Truly there are great anomalies in things agricultural.

Some time ago we mentioned an outbreak of fever amongst a neighbour's ewes. With care, the free use of disinfectants, and as much isolation as possible, the attack was subdued, and the remainder of the flock has lambed with satisfactory results; of course the aggregate of lambs has been sadly spoilt, and a few ewes were lost, but matters might have been much worse.

We do not see or hear of many foals as yet. As a fact they will be rather scarce this year. We fancy that with the great improvement that has been brought about in shire's allions they have lost some of their progenitive qualities. We have heard this attributed to the too free use of soft cooked food.

gardener must have been a necessity in a Scottish county estate long before this period, but it is difficult to clearly show how far back as to date his functions have been exercised. The Lady Bass we know kept one in 1616, because an action for slander was raised in that year by her greive against the "spous to George Key, gardiner in Tynninghame;" and still earlier, in 1524, a grant of land was made to two "hortuloni," but the last named were, not improbably, not private gardeners. At, or previous to the last named date, before the "dinging-doon" of kirks, which marked the Reformation in Scotland, it is very probable that gardening in the more polished districts was in a more flourishing condition than it was for some time succeeding that event. Gawain Douglas, who wrote eleven years previous to the last date, describes in his Twelfth Prologue, "The lusty crafty preambil perl of May," "galzeard gardingis," their many flowers, "wortis and rutis gant," "grapis zing," "seimlie seitis;" poultry picking up their food in the "Alayis," and on the trees "birds rejoisand with thare mirthful makis," in a manner that shows a mediæval garden in Scotland was one not merely in name, but one also in fact.

Fordoun states that David I. had a garden in Edinburgh in which, like some of the Roman consuls, he pottered and gardened with his own royal hand. The first James's gardening proclivities are fairly well known, and Queen Mary's garden, as well as that of the Regent Murray, is matter of history. Readers of Sir Walter Scott are aware that he entertained no doubt of the existence of old gardens; in "The Abbott," for instance, there occur several allusions to gardens of the 16th century, and also to the horticultural productions of Master Gilhoolie. One curious fact appears from the various details of dinners and suppers that have been preserved, which is the absence of vegetables and fruits from these entertainments. Even as late as 1679 at a dinner given by an earl, this peculiarity continues. It may, of course, have been taken for granted that they formed a part of every dinner, and therefore not worthy special mention, because in old exchequer accounts and in household books, both vegetables and fruits are noted. Apples and Onions were indeed articles that the City of Edinburgh taxed at their port of Leith. Both must have been scarce in Scotland, for in 1329 they were bought for the royal table, and in 1511 and in 1512 for two feasts "340 poma" in one case, and "300 poma" and "12 lb. cepi," in the other were purchased. In connection with this part of the subject it may be convenient to notice here the almost assured fact that gardeners disposed of surplus produce to their own advantage. It was an old custom in England, and Scott in "Rob Roy" refers to it as existing in the north. The Duchess of Buccleuch in 1701-2 bought from her neighbours' gardens among other produce, a dozen Artichokes from Pinkey; a peck of baking Apples from Monkton Hall; and a peck of Green Peas from Newbattle. Other items include a pint of Gooseberries, twelve Apricots, twelve Plums, 100 Cherries, with Turnips, Carrots, and Potatoes.

A gardener's income at and previous to this time was not invitingly large, and in one case that has come under my notice, current coin was not included in the wages at all. At the same time it may be noted that a schoolmaster was glad of £2 or £3 a year; and when a position with £7 could be secured the Scots dominie was delighted with his good fortune. By 1775, according to Boucher, £10 to £40 represented the money portion of the gardener's wage, and Neil at the beginning of the next century states £60, with oatmeal, cow, house, &c. During the eighteenth century the gardener's duties were largely increased by the vigorous improvement of estates, particularly in the forming of plantations and planting hedges, with the production of material necessary to these ends and their annual keeping, all of which devolved on the gardener. "Hot" walls for fruit culture were also introduced early in this century, and in 1731, Justice, having erected Pine stoves, an impetus was at once given to fruit culture under glass, and before long it was a poor garden that did not boast its Pine stove—which occasionally, as at Moreton Hall, included Vines on rafters—or some form of glass structure. A large number of new gardens, greatly increased in extent, were also laid out at a distance from the mansion, replacing those of former times, which formed appendages of the

dwelling. Sometimes the kitchen garden, flower garden, shrub garden, and orchard were walled-in in one enclosure, and at Smeaton, for example, a bowling green was also found room for. "The Wilderness" was also introduced, but it is doubtful if it long continued to be kept as such. This century saw also the establishment of the natural as opposed to the formal style of landscape gardening, and no doubt that the gardener to a large extent was made to bear the extra labour incurred by all these changes.

It cannot escape notice that the Edinburgh Botanical Garden, founded about 1670, and for which space was first found on a bit of ground now included in the Waverley Railway Station and the old flower garden attached to Holyrood Palace, exerted a great influence on Scottish gardening. A gardener who was not also a "botanist" in the old-fashioned sense of the word would have been a curiosity in those days. He was familiar with every weed, and was soon acquainted with every exotic that arrived in the country; he also liked a term in one of the big nurseries which came to be established in his midst. There is reason to believe that in the previous century small nurseries existed in the burghs, but not till this one did they attain, to any influence or extent.

The gardening literature of this period naturally increased from the one solitary book of the previous century, but it was not extensive. Two editions of "The Scots Gardiner" appeared, and in 1754 Justice's "Scots Gardiner's Director," which continued for a long time to occupy the foremost place as a standard work, especially on floriculture. Sir A. Murray wrote on vineyards, but this I have been unable to procure or consult; Lord Haddington, and later, Boucher on forestry; and John Gibson, a surgeon, on fruit trees. Gardening was also incidentally treated by Lord Kames, Dr. Alston, Home, and some others; and in "The Statistical History of Sir John Sinclair" interesting as well as curious information is to be found.

This carries us to the commencement of last century, when a new era may be said to have commenced. Neill, one of the founders of the Caledonian Horticultural Society in 1809, was a fluent writer, and to him Sinclair entrusted the general report on Scottish gardening. His remarks on fruits are particularly valuable. We have, indeed, fuller lists of names elsewhere, but he named the districts where certain varieties were most popular, or alone to be found. His assumption that all the old Pear trees and Apple trees then existing in towns with abbeys had been planted by members of the ancient faith previous to the Reformation cannot, however, be sustained. Some of the sorts are purely English, many French, but cultivated in England, and we have abundant proof that during the seventeenth century English nurserymen supplied fruit trees, and that more were imported from the Continent. All these old trees, or such of them as had been removed, were found to have been planted with "flag" stones under their roots. Neill also mentions seats of Chamomile as still existing in country places. Most of the old town gardens, which in 1742, as shown in Maitland's map, had been destroyed in Edinburgh before this, and gardening henceforth was confined to country seats.

We find data to prove the introduction of steam as a heating medium to glass structures in 1805. Cunningham's establishment at Comeley Bank was noted for open-air Mushroom culture, and later for exotic, tender, and hardy shrubs, particularly Hollies. Heaths were also already largely cultivated, and gardening generally was in a satisfactory condition. One remarkable fact in these earlier years is that not a few novelties originated in Scotland or appeared there directly after their introduction in England. The "Caledonian" has all along exerted a beneficial influence, which perhaps has not been lessened because its first members and officials failed in their wish to establish an experimental garden. It was, however, the means of introducing into country gardens, where the gardener or proprietor was so inclined, much rare or tender exotic vegetation that otherwise would not have been thought of, and where we find very old Wistarias, Judas Trees, Paulownias, or Brugmansias still existing; their introduction may be safely referred to this period. The training of wall trees in the early part of the century was also carried to great perfection, and with the culture of herbaceous plants, and forcing by means of dung-heated frames, formed the chief aim of the young gardener to excel in. The exhibitions instituted by the Royal Caledonian have also had a markedly good effect, both those held by the society, but largely also by those established everywhere throughout the country.

Besides Neill, already mentioned, Nicol wrote early in the century of fruits, flowers, and vegetables; Sang, an interesting work on forestry; and Sir Henry Stewart one equally valuable on transplanting trees; Sir Walter Scott also wrote one or two essays. Later we had the book on "Vines" by W. Thomson, and various books by his brother. "The Gardener," a monthly, published by Blackwood & Co., also exerted a good influence during the quarter of a century it lived. Messrs. Burbidge, Iggulden, Douglas, Dean, Thomson, and Simpson, are writers still with us whose pens were employed on that journal; and, to conclude this too extended sketch, are not Scottish trained gardeners everywhere exhibiting the effects of their early training?—B.

*Odontoglossum crispum* var. *purpurascens*.

“Sir Trevor Lawrence, Bart. (grower, Mr. W. H. White), again showed this handsome variety of *Odontoglossum crispum* at the Drill



ODONTOGLOSSUM CRISPUM VAR. PURPURASCENS.

Hall meeting on Tuesday the 26th ultimo. He had previously shown and received an award of merit for the same thing, and now the Orchid Committee have raised the honour to a first-class certificate. Our illustration shows the wonderful richness of the markings, the colour suffusion being one of the grand qualities of the flower. The toning of both sepals and petals—which are beautifully fringed—is a varied rosy lilac, deepening to purple toward their base, and lightening off to almost white at the margin. Reddish purple spots lend greater attractiveness to the sepals, and blotches of the same colour spread themselves over parts of the petals; the lip being white with a yellow crest, and having a sprinkling of bright brown spots. The raceme exhibited bore ten strong, substantial flowers, and was certainly highly creditable as a cultural trophy.

Odontoglossum naviium majus.

There is not, I consider, a more beautiful *Odontoglossum* in existence than this, and it really deserves more consideration at the hands of growers. It has never become common or so cheap as some others. To grow it well the plants must be placed in small pots or pans and suspended near the ventilators in the coolest house. Ample atmospheric moisture must be kept up, and heavy shading will be necessary in summer to keep the temperature low. The lovely arching spikes contain a large number of white flowers closely spotted with rosy purple.

Dendrobium lituiflorum.

Although the flowers of this pretty species are not large enough to find favour with growers at the present day, the appearance of a well-flowered plant is very graceful, and it is still worth growing. The stems are very slender, and the blossoms are produced in pairs at the upper nodes. It is very easy to grow in a moist, warm structure, such as *Dendrobiums* like, and after the growth is complete a fair amount of rest is necessary, though, in comparison with other deciduous species, it takes more moisture in winter. The lip is trumpet shaped, a fact from which the species takes its name, and is deep maroon in colour, the sepals and petals a pretty amethyst purple.

Epidendrum Wallisii.

Where there is room for its full development there is no question as to the beauty and utility of this fine species. It is hardly ever out of flower, and the colouring is very charming, a pretty chrome yellow ground with spots and lines of purple. Strong plants grow as much as 6 feet high, and both at the base of the upper leaves and also at the apex of growth the loose panicles of flowers appear. It is this habit of double flowering, very rare indeed among Orchids, that makes it so constantly attractive, as before one set of blossoms are past another is opening.

In houses that do not admit of its being grown on the stages, the plant is sometimes cultivated by being trained up under the roof. This plan has the advantage of consolidating the growth well, but they have rather an unnatural appearance. The roots of *E. Wallisii* are fairly robust, liking a sound open compost of peat and sphagnum in equal proportions, with sufficient crocks mixed with it to form a light, well-divided medium. It is not necessary to pinch the roots for pot room or to elevate the compost much above the rims, just enough to throw off superfluous moisture from the base of the stems. A native of New Grenada, it does not need much heat, the cooler end of the *Cattleya* house suiting it well.—H. R. R.

Moorea irrorata.

A PLANT of this rare S. American Orchid (see illustration on page 277) is at the present time flowering in an Orchid house at Kew. It has only been recorded as flowering on two or three occasions previously. It was originally imported by Messrs. Shuttleworth & Co., and sold by them unnamed. In March, 1892, it flowered in the Glasnevin Botanic Garden, and was named after the director, Mr. Moore. At that time a figure was prepared for the “Botanical Magazine,” t. 7262. The plant flowering at Kew is growing in a basket in the warmer division of the range, and is carrying two spikes of seventeen and nine flowers respectively. The pseudo-bulbs are short and thick, and carry two leaves each. The leaves are 2½ feet long, on short petioles, 6 inches wide, and ribbed or plaited. The flower spikes spring from the base of the bulb, and are upright and sturdy. The flowers measure 2 inches across, with reddish brown sepals and petals, white at the base, white column, and yellow lip, barred and netted with brown. It is a very handsome and distinct plant, and is creating much attention.—G. K.

Cœlogyne pandurata.

For a note on this somewhat rare *Cœlogyne* (see illustration) we would refer the reader back to page 235, March 21st. It is in flower



CÆLOGYNE PANDURATA.

about the present time of year. As regards culture, it is rather more difficult to grow than others of the genus, and the growth is rather straggling.

The Pruning of Hardy Trees and Shrubs.

(Continued from page 219.)

Pruning of Trees in Woods, &c.

ALTHOUGH trees belonging to this division play such an important part in the general health, prosperity, and beauty of the country, they are as a rule sadly neglected. Because they are hardy and seen on every hand it is often considered that no attention need be paid them. On careful examination, however, it will be found that the pruning of forest trees is quite as important as the pruning of fruit trees. In woods and forests where trees are planted thickly, a kind of natural pruning takes place. Each tree tries to get the most light, and in the struggle is forced rapidly upwards, the lower branches not having room to develop. This, with the help of judicious thinning, and the removal of dead wood, makes very little other pruning necessary. When trees are planted as isolated specimens, however, this drawing up does not take place, and a large quantity of branches develop at the expense of the trunk. In such cases the attention of the pruner is essential. Passing through a wooded district where trees are left to themselves one cannot fail to be struck with the gnarled and stunted appearance of many. Some are in good health, and their shape leaves little to be desired; others, however, present a miserable appearance, and are hardly worth the name of trees, their trunks being covered with wounds, dead branches, and protuberances of various kinds; others, again, are seen with weak trunks and large, dense heads, reminding one more of a neglected Apple tree than a forest tree, while there is barely sufficient sound timber for an average-sized gatepost. These are evidences of neglect, as a little timely attention from the pruner would have helped them to outgrow such deformities. A good specimen forest or ornamental tree should consist of a single, erect trunk, destitute of branches for quite one-third or nearly half its height, with an open, well-balanced head on a framework of good, strong branches clothed with healthy foliage. Modifications of this standard have to be made at times when it is deemed desirable for effect in gardens or parks to have branches sweeping the ground, or in a few instances where the natural habit of the tree does not allow of the trunk being cleared, but even in these cases lower branches must be kept in check, and not allowed to develop at the expense of the trunk.

Before leaving the nursery the foundation of the future specimen should be laid. It will be found necessary at a very early stage in its life to reduce bottom branches to throw strength into the trunk, but it must be done with care. If too many branches are taken off at once the stem grows too rapidly and becomes spindly. The best plan is to take a few off and shorten others, keeping the shoots pinched out as they are made. Among young trees or shrubs much time may be saved in the growing by keeping all superfluous shoots pinched or rubbed off as they appear, thus saving the plant from making a lot of wood which would have to be removed in a few months' time. The same system of reducing the lower branches should be kept up after the plant has been transferred to its permanent quarters. Until a tree nears maturity a good lead should be kept, branches thinned out where very thick, and the lower ones which have to be removed eventually, kept shortened in. This shortening does not allow the branch to thicken very fast, consequently when it comes to be sawn off there is not such a large wound to heal. It also stops bottom branches from outgrowing the upper ones. The pruning of young trees to one common standard is productive of a somewhat formal appearance, especially whilst the trees are young. This formality, however, will be outgrown when they have attained that size at which pruning can be dispensed with.

As to the time of pruning it matters very little. It is advisable not to operate for a few weeks when the first flush of growth commences in early spring, but at other times—summer, autumn, or winter—all are suitable seasons. The following passage, quoted from "Lindley's Theory of Horticulture," bears upon some of the points mentioned. He says: "The only rule to attend to is to keep the top tapering, preserving the leading shoot clear and free from clefts, and the bole from all the longest branches, leaving only those of the smaller kind that are requisite for the health and support of the tree, and clearing the tree from the bottom of all its branches as it advances in age. But the bole should be cleared slowly at first when the tree is young, only keep the branches that are left thereon small by often pruning, so as not to injure the tree when it becomes timber."

Turning to trees that have been neglected during the early part of their lives, we find that many may be turned into good trees with a little patience by careful pruning; and providing the specimen is healthy and other conditions are favourable, surprising results can often be obtained from the roughest looking plants. In like manner trees which have become prematurely old, trees that have been broken by wind or damaged by other causes, or even old trees that contain a

lot of dead wood, but are otherwise healthy, may be rejuvenated by judicious pruning. A few instances mentioned later will serve to show what may be done in a few years' time with trees that had been neglected. When a neglected tree is taken in hand dead and useless inside wood should be removed, after which a leader should be selected. If there is no natural lead a strong shoot as near as possible to the centre should be tied up by means of a stake secured to the main stem, and the surrounding branches shortened until it has a clear lead. Afterwards the lower branches should be removed or shortened as the occasion warrants. All wounds must be cut clean and dressed as previously advised, the dressing of large ones being repeated at intervals until they have healed over, taking care not to tar the young wood as it forms. Any rival leads that may appear should be removed at once, a single central trunk being aimed at. Although very crooked leads may often be straightened, it is sometimes advisable in bad cases to cut the top clean out and have a fresh start from a strong terminal break. Deep wounds and decayed places should be well cleaned and dressed as previously advised, and plugged up with hard wood. This in some instances will heal over, and the life of a favourite tree may be prolonged for a considerable number of years.—W. DALLIMORE.

(To be concluded.)

When the Sun Shines.

THROUGHOUT the dark days of autumn and winter, when our land is wrapped in mist—rest, decay, are the dominant features which vegetation displays in British landscapes and gardens; the heavy rains and snowstorms come, to perform their great part in the economy of Nature by saturating the soil and filling the springs to overflowing. The frost acts on the upturned soil, converting into ice the tiny drops of water between the minute particles of soil, and thus forces the latter further apart; the thaw comes, shrinkage takes place, and the air rushes in to fill up the vacuum, as well as to still further sweeten and enrich the soil. Happy is the man who has thrown up his heavy soil roughly in early winter, for during the first few drying days still further shrinkage takes place, and the stubborn earth crumbles to powder because of the continual expansion and contraction, set in motion by natural laws.

The moist, cold weather sometimes continues through winter till early spring; and how often goes up the cry that the "season is late." We are eager to sow, to plant, to press onward with work which shall bring the reward at harvest time. Eagerness is undoubtedly a good trait of character for any gardener to possess, and some crops must of necessity be grown or planted comparatively early in the season; but in regard to many, how great in importance is that golden motto, "Wait till the sun shines."

Choose a warm day for sowing seeds in early spring, is a sound practice which cannot be too strongly advocated. The loosened soil is then quickly warmed up by the sunshine, and the seed committed to the earth under congenial conditions, for we should never forget that "warmth," as well as air and moisture, is absolutely essential to successful germination, and the soil which is stirred "while the sun shines" is quickly warmed and sweetened, and thus supplied with two of the three essential elements. Seeds sown under such conditions soon germinate, and the young plants make rapid progress. A little extra attention in regard to stirring the soil at seed time is always well repaid, and many time-honoured practices are sound, because they rest on the sure foundation of scientific fact, though they may have been first carried out by gardeners of long ago who laid no claim to the possession of scientific knowledge. Close observation had, however, taught them certain facts which proved them to be scientists in reality, if not in name. For instance, what can be sounder than the following plan, which was practised by gardeners generations ago? Some fine promising morning in early spring, when it was desirable to sow seeds of various descriptions, the surface of the seed bed was loosened with the hoe; in a few hours the loosened soil was dry and warm, drills were then drawn and left for a time undisturbed. Under the influence of bright sunshine a dry crumbling surface of warmed soil was obtained, and seeds sown under such conditions made splendid progress, because warmth and air were allowed to play their important parts. Moisture is seldom lacking in early spring.

Again, who can correctly estimate the value of hoeing frequently between growing crops in spring "when the sun shines?" We know that crops so treated grow apace, and soon outstrip other crops which are neglected in that respect. There is much land under cultivation in Britain to-day which would undoubtedly be far more productive than it is if it received more constant attention in regard to stirring

the soil. The sun's rays quickly warm the air, and the air is constantly forced into the soil through a "loosened surface." Under such quickening influences roots gain vigour and activity, and top growth advances by "leaps and bounds." Every man who plies the hoe industriously "when the sun shines" is adding to the wealth of the nation, by providing conditions under which fresh air—oxygen—can easily reach the roots of crops. It is of vital importance to their successful progress, the supply is free to all.

By taking advantage of the above facts, some private gardeners are able to grow better and earlier crops than their neighbours, and some market gardeners for a time control the markets with their early crops. One other point is also of great importance in the production of such early crops as Cabbage and Lettuce—viz., abundant manuring. The richer the soil the more quickly will crops grow, "when the sun shines," because during warm weather when the soil is moist growth is practically regulated by the amount of soluble food within the reach of roots. A moderate dressing of manure may perhaps contain enough plant food to produce a heavy crop, provided growth was regular from day to day.

But how seldom is it so. Sometimes moisture is lacking, at other times sunshine, then rain comes, and the sun shines and crops "rush" into growth as long as such favourable conditions continue, and there is also plenty of "manufactured" food to draw upon, but when the supply gets scanty growth becomes slow, even when climatic conditions are favourable. There is usually a reserve of potash and phosphates in well cultivated soil, but no similar reserve of soluble nitrogen; a little nitrate of soda, scattered between young crops then supplies the "missing link," and the crops grow freely because supplied with all the constituents necessary.

In other ways, too, the sun is a mighty force in building up the growth of plants and crops, for without its aid the decomposition of carbonic acid gas and the elaboration of carbon, for the production of more tissue, pith, and starch, could not be brought about. Truly the sun, by working in unison with other forces of Nature, is the main-spring which sets the whole world in motion, and the more we know of its wonderful power, the better opportunities we have of turning to the best account the wonderful power which is always at our command "when the sun shines."—ONWARD.

Easter

Is upon us, and we are, a good many of us, full of nothing but the thought of decorations appropriate to the season. Our parish church calls, and we respond, inly wondering if we can arrange some new scheme of decoration, something striking and bright. There is one thing about Easter (being a movable feast)—we have not always the same flowers to deal with, that is, outside our hothouses. Some villages do not boast much in the way of glass, and must depend for

supplies on the woods and lanes. I am generally vexed by the way the pretty Primrose is treated; bunched together in little stiff posies, without a vestige of green. Now it does not grow in that form, and if the decorators cannot equal or improve upon Nature they had better give up their work altogether.

Now I saw in a church not long since a happy idea. Do not call it extravagant, for it really is not. The base of the pulpit, the ledges and other parts of the church, had set in moss whole roots of Primroses. Not put too close, just arranged as they might be in the woods, the effect was beautiful. Of course there was some hidden receptacle for water; a very shallow dish would be enough, but every leaf and flower just stood up in its own natural way. Marsh Marigolds are fine; there is a brilliancy about them, and in water they last so long. You will often see crosses and wreaths made of Daffodils closely massed as though the maker were trying to put the greatest possible number of flowers in the least possible space. Every variety of the Narcissus family wants to stand out alone, and happily they are flowers that are always cut with long stalks. A strong band of dark green calico with loops at intervals



MOOREA IRRORATA. (See page 275.)

will be found most useful to hold small-vases, or failing these the common jelly glass or custard cup. It grieves me always to see flowers fading prematurely for want of a dish of water.—THE MISSUS.

Thinning Leaves of Fruit-bearing Plants.—Sunlight largely adds to the sweet and general good character of the fruit, but it, alone, does not wholly ripen the fruit. Ripening is a vital process in which an abundance of good, healthy foliage is the prominent agent in the work.

NOTES & NOTICES

Weather in London.—Thursday last (March 28th) was wretchedly cold, and in the City we had a heavy shower of snow. Friday was slightly milder, but Saturday was again cold, boisterous, and very wet. Sunday morning opened with a deluge of rain, but the afternoon and evening were fair and pleasant. April 1st was a beautiful, smiling day, though heavy clouds rolled overhead. Tuesday was a duplicate of Monday. As we go to press on Wednesday it is breezy, mild, and dull.

Weather in the North.—The weather of the past week has been wintry in the extreme. From 4° to 15° of frost has been registered nightly, and snow has fallen on the last two nights. Monday was milder, but the snow lay on the hills all round.—B. D., *S. Perthshire*.
* * * Writing from Dumfries on Saturday Mr. Arnott says:—
“The weather is very unlike spring this week, and I fear it will do some injury. Fortunately for us we have no fruit blossom yet, though a few days of spring-like weather would bring it.”

Weather in Ireland.—The character of the weather for the past month was, on the whole, dry with piercing east winds. The latter days were intensely bitter with intermittent showers of snow, but lasting for a short time, and frost could by no means be termed prevalent. There is a consensus of opinion that crops of all kinds will be backward, whilst bulbous flowers are yet shy in coming into bloom.

Sussex Weather.—The total rainfall at Abbots Leigh, Haywards Heath, for March was 1.91 inch, being 0.04 inch above the average. The total for the three months 5.09 inches, 1.57 inch less than the normal. The heaviest fall was 0.46 inch on the 30th. Rain, or snow, fell on fourteen days. The maximum temperature was 54° on the 12th; the minimum, 21° on the 29th. Mean maximum, 45.21°; mean minimum, 33.04°; mean temperature, 39.12°, which is 1.43° below the average. March came in strong, and has been throughout cold and almost snnless. The wind was N. and N.E. from the 8th to the 29th. It blew a gale from S.W. with nearly half an inch of rain on the 30th. April came in beautiful and bright, but in the afternoon a thunderstorm came up, bringing more snow, hail, and rain. Fruit trees have made very little progress yet, and vegetation generally is late.—R. I.

Estate of the Late Mr. Dunnett.—Mr. William Henry Dunnett of Stour House, Dedham, Essex, late a partner with Messrs. James Carter & Co., seedsmen, High Holborn, died on December 29th last, aged seventy-four, leaving property of the value of £110,683 16s. 5d., of which the net personality is £65,551 6s. 4d. The executors are his widow, his son Harry Norman, his daughter Jane Ann, all of Dedham, and the Rev. Hamilton Ashwin, LL.D., of the Lectnre House, Dedham.

Rose Show Fixtures in 1901.

- June 12th (Wednesday).—Colchester and York†.
 „ 26th (Wednesday).—Richmond (Surrey), N.R.S.
 „ 29th (Saturday).—Canterbury and Windsor.
 July 2nd (Tuesday).—Drill Hall (R.H.S.) Southampton*, and Hereford
 „ 3rd (Wednesday).—Croydon, Hanley*, and Farningham.
 „ 4th (Thursday).—Temple Gardens (N.R.S) and Norwich.
 „ 9th (Tuesday).—Gloucester, Harrow, and Wolverhampton†.
 „ 10th (Wednesday).—Stambridge (Essex), Worthing, and Formby.
 „ 11th (Thursday).—Bath, Brentwood, Eltham, Helensburgh, and Woodbridge.
 „ 13th (Saturday).—Manchester.
 „ 16th (Tuesday).—Kidderminster*.
 „ 17th (Wednesday).—Ulverston (N.R.S.) and Cardiff*.
 „ 18th (Thursday).—Halifax.
 „ 20th (Saturday).—Newton Mearns.
 „ 23rd (Tuesday).—Tibshelf.

* Shows lasting two days. † Shows lasting three days.

The above are the only fixtures definitely arranged that have as yet reached me. I shall be glad to receive the dates of other Rose shows (or horticultural exhibitions where Roses form a leading feature) for insertion in future lists.—EDW. MAWLEY, *Rosebank, Berkhamsted, Herts*.

Fire-proof Timber.—American enterprise has found a means for making certain woods fire-proof. Liquor is forced through the wood under a very great hydraulic pressure, and this renders the wood almost incombustible.

Royal Horticultural Society.—As mentioned in our report of the latest general meeting of the Royal Horticultural Society, held on Tuesday, March 26th, forty-two new Fellows were elected, amongst them being Lady Rosamund Christie, Lady R. Gipps, General Sir R. Gipps, K.C.B., Rev. Henry Swann, Chas. J. Billson, M.A., Mrs. Gore Langton, and W. H. Myers, M.P. The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, April 9th, in the Drill Hall, Buckingham Gate, Westminster, 1 to 5 P.M., when special prizes will be offered for Daffodils. At three o'clock a lecture on “Some of the Plants Exhibited,” will be given by the Rev. Prof. G. Henslow, M.A., V.M.H., &c.

Private Correspondence.—While in conversation with a gardener who lives in the west of London, and whose reputation has caused him to be known in all parts of the United Kingdom, and much further, he complained of the tremendous amount of private correspondence that he daily receives from fellow craftsmen and others desirous of his advice. He is one of the best natured men, and most enthusiastic and willing to be of service to all, but when one comes to receive close on a dozen letters a day, most of them without a stamp for reply, one's magnanimity loses stimulus. Mercenary motives were not placed first by our friend when he hinted at making such a notice as we here issue, but he is too sorely tried for time to do justice to all who inquire of him. The horticultural press is always willing to help correspondents, and to make efforts to secure the best advice for them, and this is the channel through which queries should pass.

Fruit and Vegetable Retailers' Association.—The annual meeting of the Birmingham and District Retail Fruit and Vegetable Retailers' Association was held on Thursday evening at the Tamworth Arms Hotel, Moor Street; Mr. C. Bellringer presiding. The committee's report made mention of the fact that a person not a member of the association had been appointed to look after the weights of Grapes, Tomatoes, and any other goods in the market. An agitation for the federation of kindred bodies was begun by the Birmingham association, and favourable replies had been received from Bristol, Liverpool, and other large centres. Now that federation had been accomplished, the committee considered the time had come to ask the markets and fairs committee to appoint an official inspector in the wholesale market. The report concluded by stating that a balance of £34 10s. 10½d. remained in hand. The report having been adopted, Mr. Bellringer was re-elected president, Mr. F. C. Cummings treasurer, Mr. E. C. Daft, secretary, and Mr. W. W. Bennett, assistant secretary.

West Cornwall Crops.—The severe weather that has prevailed throughout West Cornwall during the last few days has had a most disastrous effect on the growing crops. Potatoes planted early in January are well up in rows, and an early season was anticipated, while many others were just breaking the ground. But the frost cut them so severely that it will probably take weeks for the plants most advanced to recover. Further damage was done to the crop by other recent sharp frosts. It will, perhaps, be hardly possible to accurately estimate the loss the market gardeners of West Cornwall have sustained during the past week, but it is very great, and the prospects of the coming season have been materially diminished by the set back the crops have received. The Broccoli crop this season has not been a success. It came in later than usual, and the heads were so coarse and rough that it was difficult for Cornish Broccoli to find buyers, unless at a very nominal figure, when foreign Broccoli was in the markets. It is reported that Cornish Broccoli this year is particularly coarse and flavourless. There is no doubt that growing Broccoli year after year on the same land tends to exhaust the soil of that particular element on which the plants especially feed, and some ascribe the deterioration almost entirely to that cause. Others, however, contend that the seed has become exhausted by its having been saved for many years in succession from plants grown on the same soil. The market gardeners might next year exchange seed with one another and carefully watch results. In the flower trade there has not been much doing. There has, however, been no lack of blooms, though the long spell of easterly wind, which commenced last month and continued all through, has somewhat checked their development; but with milder weather the Wallflower and Narcissus crops particularly will be most abundant.

Gift of Camellias for Aberdeen Parks.—At a meeting of the Links and Parks Committee of the Aberdeen Town Council on Thursday afternoon, March 28th, a letter was read from Mr. Wm. Paul, Waltham Cross, Herts, offering the Council some splendid Camellias for the public parks. The committee resolved to accept the gift with thanks. Mr. Paul is the father of Mrs. Gordon, wife of the town clerk of Aberdeen. Whether the Camellias will succeed outdoors at Aberdeen may well be doubted, though probably they may be housed.

Apple and Pear Growing.—In answer to a question put in the House of Commons, Mr. Hanbury informed Sir J. Rankin that stations for agricultural and horticultural experiments had not hitherto been established directly by the State itself. In the case of Apples and Pears, which depended so much on the climate in which they were grown, no one central station would be of much use, and it was only by local agency that such stations could be established in so many varying districts. Both in the north and south of England there were institutions aided either by local taxation grants or by direct grants from the Board, in which experiments were made in the growth of Pears and Apples, and this appeared to be the proper system to be adopted in districts where there was a special interest in the growth of these fruits.

The Southern Counties Carnation Society.—The report of this society for 1900 has been sent out. It includes a number of short papers on the culture of Carnations and other phases of interest in regard to the flower, which tend to make the report specially valuable. The society has arranged to include a number of Sweet Pea classes at their Carnation Show to be held at the Royal Pier, Southampton, on July 24th. Prizes of £1, 12s., 10s., and lesser sums for a few varieties of Sweet Peas, are being offered. The full notice of these will be found in the report, which may be had by writing to Mr. Wm. Garton, jun., York Buildings, Southampton. The society has the goodly balance of £93 to its credit.

Ancient Society of York Florists.—The first of the shows held by this very old floricultural society will be held on April 17th, and is chiefly devoted to Auriculas, Polyanthus, Tulips, and other bulbous flowering plants. The second show is announced for May 22nd, when Tulips will again be paramount; and the third, or July show, takes place on the 17th of that month. Another small show occurs on September 4th, and the large Chrysanthemum show has been fixed for November 13th, 14th, and 15th, at which some very substantial prizes are offered. The total receipts last year were £594 16s. 4d., and the expenditure £586 1s. 9d., leaving a balance of £8 14s. 7d., which, when added to the society's bank account, leaves a total of £197 4s. 5d. The committee have reason to be satisfied with the position of affairs. The secretary is Mr. George F. W. Oman, A.S.A.A., 38, Petergate, York.

Instruction Gardens.—An experimental garden of 2 acres was started at Droitwich, Worcestershire, in January, 1896. This garden increases in interest and instructiveness yearly. Fruits are represented in many varieties. Vegetables are cultivated under two different sets of manurial conditions, as represented by plots devoted to stable manure; mixed chemical manures; garden refuse; stable manure and mixed chemical manure; no manure; sulphate of ammonia; nitrate of soda; kainit, and superphosphate of lime respectively. Visitors who take an interest in hardy flowers will find representatives of that department of horticulture, but we believe the two first mentioned departments receive most attention. Planting, root and branch pruning, manuring and liming, trenching and digging, sowing seeds and transplanting, budding and grafting, making cuttings, spraying and grease banding, thinning and weeding, and the usual details of cultivation in their due season are practised in this experimental garden. It is stated that 2339 persons visited the garden during 1900, as compared with 1809 in 1899, 1495 in 1898, and 991 in 1897; the largest number upon one day was 106, on Saturday, July 14th; so that to those who use their observation, an influence for good should be the result of these visitations. A large named selection of hardy fruit trees and bushes are included in the garden, and form one of its most instructive and valuable features. The report of this experimental garden (which has just been issued) goes on to state how the orchard and trees are treated, what returns were got from this or the other course of treatment, with remarks on the different varieties. Vegetables also come under critical observation; while the grafting experiments and trials against garden pests make this report exceedingly useful. The garden is under the management of Mr. J. Udale, chief horticultural instructor for Worcestershire.

Awards.—We are asked to state that *Lælia Jongheana* var. *Kromeri* received a first-class certificate at the last Drill Hall meeting; whereas we reported it to have received only an award of merit.

Gardening Appointment.—Mr. Finn, formerly head gardener to Mrs. West, Kileroney, Bray, has assumed a similar position in the gardens at Beaumont, Drumcondra, the Convalescent Home of The Mater Hospital, Dublin.

Woking Horticultural Association.—The annual report of this Surrey association shows how well the past year's work and doings have been enacted. The "garden party" arranged last July was new, and proved to be popular and successful; while the monthly meetings, especially when the lectures are accompanied by the limelight lantern, were well attended, and evoked a considerable amount of interest. In place of the deficit of £13 appearing twelve months ago the association now possesses £20, and is perfectly free of liabilities. Mr. H. A. Needs, Heath View, Horsell, Woking, acts as secretary.

Richmond Horticultural Society.—The annual report for last year refers with pleasure to the visit of the Royal Horticultural Society's president and committees to Richmond Show last June. The committee are also glad to be able to state that arrangements have been made for the National Rose Society to hold its popular Southern Counties Show in conjunction with the Richmond Show to be held on 26th June next. A new rule has been adopted, whereby contributors of £10 in one amount may be elected life members of the society, and 1 guinea subscribers will henceforth be entitled to a greater number of tickets for the show. The financial position of the society may be bettered by these adoptions.

National Dahlia Society.—The annual report of the Dahlia Society, now issued, points out that the exhibition of Cactus Dahlias in pots (1900) was not encouraging. The reason of the poor turn out was that several intending competitors in this class had mistimed their plants. Greater success is expected another year. The committee state that all classes of Dahlias are welcomed, they are unwilling to set up any particular type as being the ideal one. The list of Cactus Dahlias that has been published annually by the society for some years will not in future be issued. It has been decided instead to revise the official catalogue at intervals. Dahlia or other horticultural societies offering not less than £5 in prizes for Dahlias can now be affiliated to the National Dahlia Society. The arrangements for 1901 include the annual exhibition, which will be held at the Crystal Palace on Friday and Saturday, September 6th and 7th. Then a committee meeting will be held at the Drill Hall, Westminster, S.W., on Tuesday, September 24th, for the purpose of awarding certificates to seedling Dahlias. Entries must be made to the hon. secretary, at the Drill Hall, before 11.30 A.M., on the morning of the meeting. At the meeting at the Drill Hall there will be a class for six blooms of Cactus Dahlias in a vase with any foliage, to be judged both for quality of flowers and effective arrangement. Mr. J. F. Hudson, M.A., Gunnersbury House, Acton, W., is secretary.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1901.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
March.		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
		deg.	deg.	deg.	deg.					
Sunday .. 24	N.E.	33.0	35.7	44.5	32.8	—	40.3	42.2	44.2	23.4
Monday .. 25	E.N.E.	35.5	34.6	38.0	31.3	0.03	39.8	42.2	44.2	22.1
Tuesday 26	N.W.	32.7	32.0	38.3	27.0	—	38.7	42.0	44.2	22.0
Wed'sday 27	N.W.	34.2	32.0	38.3	27.0	—	38.2	41.5	44.0	19.5
Thursday 28	N.	33.5	31.8	39.4	25.3	—	37.8	41.3	43.9	19.1
Friday .. 29	W.N.W.	35.0	30.9	43.2	24.1	0.07	37.4	40.9	43.9	18.0
Saturday 30	S.S.W.	43.3	41.4	50.4	34.9	0.49	33.8	40.9	43.7	33.2
MEANS ..		36.0	34.1	41.7	28.9	Total	38.7	41.6	44.0	22.2

A week of very wintry weather, with intervals of bright sunshine, snow, sleet, and extremely cold winds. There was a heavy gale, accompanied with rain, on the 30th ult.

Tunbridge Wells Horticultural Society.—The adjourned meeting of the above society was held on March 28th at the Pump Room. Mr. P. W. Braybrooke presided, and there was a representative attendance. The report, which has already been published, was adopted after revisions, suggested by Mr. Charlton and others, in favour of continuing the show next summer, in the hope of getting better local support. The committee was increased by the addition of several members of the Tunbridge Wells Gardeners' Society and others, and it was pointed out that to abandon the show, as some proposed, would be a great mistake, especially in view of the probability of the discontinuance next summer of village shows on the Sussex side of Tunbridge Wells. Mr. Charlton said, to hold no show in the town would be to deprive it of one of its attractions at a time when the season was on. It was decided to give more variety to the show.

Edinburgh Chrysanthemum Show.—We have named the Chrysanthemum Exhibition of the Scottish Horticultural Association the "Edinburgh Chrysanthemum Show," and doubtless the title is more familiar than the longer one quoted in this sentence. We have received the schedule of prizes to be awarded at the show of November this year. The exhibition, by the way, takes place on the 14th, 15th, and 16th of that month, and the amount to be competed for reaches over £440. Along with the usual City of Edinburgh prize, the Scottish Challenge Cup and others, we notice on page 10 of the schedule, a first prize of £20, a second of £15, and third of £10, respectively, offered for a trade floral exhibit. The class is for "the most effective and meritorious exhibit of bouquets, baskets, wreaths, crosses, or other floral designs, on a table, 20 feet by 10 feet, with decorative plants and foliage, at the discretion of the exhibitor." Such a feature ought to be of very great interest to the general public. In the gardeners' and amateurs' cut flower section, class I. furnishes a grand Victoria Memorial prize of £20 and a gold medal, for twenty vases of Chrysanthemums in twenty varieties, three blooms of each. The second, third, and fourth prizes are respectively £15, £10, and £5. The City of Edinburgh prize of course provides a piece of plate of the value of £20 as first prize, and £10, £8, and £5 for the remaining prizes. These are perhaps the principal classes, though special prizes are offered in twelve classes altogether, and surely sufficient is presented to draw forth the very best efforts of gardeners in all parts of the United Kingdom. All entries close on Friday, the 8th of November. Anyone wishing a schedule should write to the hon. secretary of the association, Mr. Peter Loney, 6, Carilton Street, Edinburgh.

Boycotting the Market Gardeners.—A boycotting struggle between the market gardeners of the Lothians and the greengrocers of Edinburgh has begun this week. Some time ago the committee of the Edinburgh Market Gardeners' Association unanimously recommended that the members of the association should abandon the plan of selling by the system of "fourteen to the dozen," and should adopt the more business-like plan of selling by the "even dozen," just as was now done by the market gardeners and all the other vegetable merchants in the other towns. According to an agricultural contemporary, at the next general meeting of the association this recommendation of the committee was carried by a large majority, the new system to come into force with the beginning of April. The Edinburgh greengrocers are up in arms against the proposal to sell by the system of twelve to the dozen, and they are threatening to boycott any and every market gardener who will not give "fourteen to the dozen." This proposal to establish a boycott on the subject is being strenuously supported by some Glasgow vegetable dealers, who, although they have to buy by the "even dozen" in the Glasgow Market, are anxious to see a rupture between the Lothian market gardeners and the Edinburgh greengrocers, as the Lothian market gardeners have for some time had a large direct trade in supplying greengrocers in the mining towns of the west, which the Glasgow men regarded as their special preserve. It is not at all likely, however, that the threatened boycott in the Edinburgh market garden trade will come to much. If any trouble be caused in that way the market gardeners assert that they will sell to the public at wholesale rates, and the Edinburgh public would then get their vegetables in the Waverley Market at less than half the price which they have to pay to the retailers for them. Besides, the hawkers or hucksters, who already do a considerable trade in Edinburgh, would then have a splendid innings, and would have little difficulty in capturing practically all the trade at present held by the retailers.

Rudbeckia californica.

FOR the spacious hardy plant border or for the less reserved areas of the wild garden, this finely conspicuous plant is indeed a splendid subject. Of late years it has taken a prominent position, and we have had occasion to call attention to this and other Rudbeckias in times past. About twenty-five species are known, and with these are included, according to the latest authorities, the species of *Echinacea*, *Lepachys*, and *Obeliscaria*, which some botanists have considered to represent distinct genera. In the Royal Gardens, Kew, about ten species are grown, and these comprise all the best marked types, for there is a strong family resemblance running through the Rudbeckias, as in many other groups of the *Compositæ*.

R. californica, which we illustrate, is in several respects a noteworthy perennial plant; it is of free growth and strong habit, succeeding in ordinary garden soil, and is quite hardy. Next to *R. maxima* it has the largest conical disc of the genus, which imparts much character to the flower heads. It comes near to *R. laciniata*, or what is known in gardens as *R. diversifolia*, but the leaves are ovate or oblong, and not cut or varied in form like that species. The plant attains a height of 5 feet to 6 feet, though in a wild state it is found to be dwarfer, occasionally not exceeding 2 feet in height. The flowers are large, the rays florets often $2\frac{1}{2}$ inches long and bright yellow, the high cone-shaped disc being of a brownish tint. *R. californica* is found growing on moist ground in the Sierra Nevada, California, and according to Gray it was there first found by Bridges. The present is a favourable season of the year in which to plant Rudbeckias.

Shrubby Calceolarias.

ALTHOUGH to some extent these plants are not so popular as formerly, yet well grown and profusely flowered beds are in early summer much admired, and if the plants are placed in beds situated in a cool rather than a very hot, dry position, it is surprising what a length of time they will remain in good condition. To enable them to do this the plants should, during March and April, have the hardest possible treatment in the frames where they have been wintered. The best plants are always secured from cuttings inserted in autumn in cold frames. Very little attention is required during winter beyond temporary protection from severe frosts and keeping the frames closed until February. The cuttings do not form roots until then, but remain fresh all the same. The base of each cutting forms a callus, which is the matter exuded from the cutting after its insertion in the soil. It collects on the edge of the cut surface just below the joint of the cutting and there hardens. From this hardened ring or callus the roots originate, growing and multiplying rapidly in rich sandy soil, which forms the cutting bed. The cutting also commences growth, and if the top or centre of each is taken out, each joint will push growth, a bushy plant soon resulting.

There is the danger of them becoming crowded, especially if the cuttings were inserted thickly, hence it is desirable to remove all but those 4 inches apart, and transplant on another bed of soil. In forming this bed it may with advantage be done on a hard base, placing first a layer of manure quite decomposed, and on this a good mixture of loamy soil about 4 inches thick. The bed should be enclosed with rough boards, on which can be laid some temporary protection if necessary to shield the plants from severe frosts. Pit or frame lights are of course the best, but sticks laid across supporting mats will do very well. The best time to remove the young plants is when they break into growth after the first topping. They will soon start freely into growth, and may be kept hardy and stocky by affording them abundance of air. When new growth has extended 4 inches top once again, thus insuring bushy short plants. By this time the fibrous roots will have increased and extended into a dense mat round the plants. The latter may then be lifted with ease and safety and planted permanently.

Early April is a very suitable time to plant out, preparing the bed or border by freely digging and mixing in well-decomposed manure. Lift with as much soil as possible adhering to the roots, and place 6 inches apart, sinking nicely below the surface. The ball of the plants being moist and the bed moist, no water will be required so early in the season. Hot weather occurring in May, however, may dry the soil considerably, and render a good watering necessary. When the surface has dried again after this loosen it with a hoe to maintain a crumbly surface, which acts as a mulch, and helps to retain the moisture while at the same time admitting warmth. Loosening the surface also renders the necessity for frequent watering unnecessary. When dry hot weather sets in, a mulching of manure will assist in keeping the soil cool.—E. D. S.



RUDBECKIA CALIFORNICA.

Carnations and Picotees for Show.

Few flowers are admired more than Carnations, and as a hobby no subject of the garden gives greater pleasure than their culture for exhibition. The selection of varieties is so extensive, and the plants, even when not in bloom, are so interesting to the florist, that they never cease to retain our appreciation. The Carnation is an easy plant to grow, yet we know none more readily spoiled by careless treatment or too much coddling. Many fail with them during the winter months, the foliage being an easy prey to "spot" if kept at all damp, and maggots attack the plants. Generally the stock looks well, and it is only exceptionally weak varieties like that charming yellow-ground Picotee Mrs. Robert Sydenham, or the beautiful salmon-pink self Endymion, that do not keep their healthy appearance during the winter. The last named should not, perhaps, be termed weakly, because it grows well in summer time, but if maggot or "spot" in the leaf attack any in winter this is about the first sort that succumbs. The Carnation for show purposes is treated as a pot plant, but it is hardy enough to stand the winter in open ground. With open air plants, however, one cannot produce clean, well-shaped, high-coloured blooms to win prizes with any degree of certainty. One might mention exceptional instances of its being done, still pot culture is generally adopted. To start from the present time it is necessary to have sufficient plants well established in small pots—plants that have wintered in the same, for the Carnation will not stand the roots being disturbed after autumn with impunity. These are ready in spring to be pnt into the flowering pots. In our case 9-inch pots are used, and three plants are pnt into each. This rule is broken in the case of very weakly growers, which are either placed four in a pot, or two are placed in a 6-inch pot. We sometimes think that it would be well to grow even the strong-growing sorts one in each 6-inch pot, but we adhere to our usual way as a saving in labour and space. The compost used is the best and most fibry loam obtainable, dry cow manure run through a sieve, and broken brick rubble. Two-thirds of the former is the proportion used. A sprinkle of bonemeal is advised in the case of the strong-growing selfs and the fancy varieties, but not for the old florists' class, the bizarres and flakes.

Drain the pots well, for there is nothing Carnations dislike so much as sodden, sour earth. After potting keep the plants under glass, and for a week or two do not give water, especially if the compost is moist, as it should be at this time of the year. New growth will quickly form. One must be very careful in the watering, so as not to employ any except when the soil is dry, and then to give enough to soak the whole of the soil in the pot. An occasional stirring of the surface soil is performed when it has a tendency to become caked. Each flower shoot may have a neat stick to support it, and the plants are placed in the open air towards the end of April. Previous to this the sashes are taken from the frames during favourable weather. Place the pots on a firm bottom, where worms cannot get into the drainage.

For a month or so there will be plenty to do in watching the development of the flower buds. These may be thinned; three or four (the last number on the strongest) may be left for each plant to develop. If any stimulant is needed we employ it whilst the buds are swelling; we favour the use of liquid made from sheep droppings. This is of a cool nature; it does not burn the roots, and when used in a weak state regularly seems all that is wanted to provide a healthy and vigorous tone to Carnation growth. Our only serious enemy in the south is thrip; it gets into the calyx even before the same begins to burst, and effectually spoils the outer petals by taking the colour out of the edges. For this reason the plants are housed early and fumigated often. We said that this was the only enemy, but a serious drawback to southern growers is the intense hot weather just at the time the blossoms are opening. In most seasons we find the vivid scarlet and dark shades get burned, even when a dense shade is employed.

In the matter of good varieties there is an ample supply, but no one who desires to win prizes in good competition can afford to be without any of those named below. There are so many divisions of Carnations and Picotees demanded at exhibitions, that it will be well to keep the same in order. *Fancy Carnations*: Brodick, Cardinal Wolsey, Czarina, Galileo, Guinevere, Hidalgo, Monarch, Perseus, Phœbus, Queen Bess, Voltaire, and Zingara. *Self-coloured Carnations*: Bendigo, Benbow, Enchantress, Exile, Germania, Lady Hindlip, Lady Hermione, Mrs. Eric Hambro, Mrs. James Douglas, Trojan, Sadek, and Uncle Tom. *Scarlet bizarres*: Robert Houlgrave, Robert Lord, and Admiral Curzon. *Crimson bizarres*: Master Fred, Lord Salisbury, J. S. Hedderley. *Pink and purple bizarres*: William Skirving, Sarah Payne, and Arline. *Scarlet flakes*: Sportsman, John Wormald, Guardsman. *Rose flakes*: Thalia, Merton, Mrs. Rowan. *Purple flakes*: Gordon Lewis, George Melville, Charles Henwood. *Yellow-ground Picotees*: Empress Eugénie, Heatherbell, Hesperia, His Excellency, Hygeia, Lady St. Oswald, Molucan, Mr. Nigel, Mrs. Douglas, Mrs. Tremayne, Mrs. Sydenham, and Onda. *White-ground Picotees, red edge*: Gamymede, Isabel Lakin, Thos. William, Mrs. Gorton; *purple edge*: Muriel, Amy Robsart, Somerhill, Harry Kenyon; *rose edge*: Little Phil, Mrs. Payne, Fortrose, Favourite; *scarlet edge*: Mrs. Sharp, Clio.—H. S.

Hardy Spring-flowering Ericas.

THE Ericas that flower in the open air during winter and early spring are all very attractive plants, and in places where peat-loving shrubs thrive they are the most useful of the various very early flowering shrubs. There are numerous other plants that make a fine show, providing no frost occurs whilst they are in flower, but frosty or not, the Ericas care little, the flowers being as bright and healthy looking after a spell of frost as they were before; this fact, together with their lengthy flowering season, warrants them a considerable amount of attention when a selection of dwarf shrubs is being made. The hardiest are *E. carnea* and *mediterranea*, with their respective varieties. Then for sheltered places there are the slightly tender, taller-growing species *arborea*, *australis*, and *lusitanica*. *E. carnea* is a well-known European species, growing 6 inches high, and making a dense carpet, which from the end of February onwards is a perfect mass of reddish flowers. As a companion plant to this the white flowered variety should always be found. *E. mediterranea* is found in Western Europe and Ireland. It grows several feet in height, and bears upright racemes of bright red nodding flowers in profusion. A variety known as *E. hybrida*, probably claiming *E. carnea* and *E. mediterranea* for parentage, is the most useful of the hardy Heaths, as it commences to flower in December, and continues to do so until April. It grows almost a foot high, and bears bright red flowers. Other varieties are *alba* and *glauca*, the former having white flowers, the latter glaucous leaves.

Of the other species *E. arborea* makes a large bush 10 feet high, and bears white flowers from February to May. It is a S. European plant. *E. australis* is a Spanish species, growing 4 or 5 feet high, bearing red flowers very freely. It is a very ornamental plant. *E. lusitanica* is a beautiful plant, making tall, upright shoots with very dark coloured leaves, among which pure white flowers are produced in profusion. Its period of flowering is February to May.—W. D.

Edinburgh Botanical Garden.

The Plant Houses.

A FEW years ago the site on which the handsome range of glass, shown in the accompanying illustration, stands was occupied by heavily built and old-fashioned houses, for the most part glazed with small glass and ventilated by sliding sashes. It is not on these conditions that visitors of the present day are asked to look, but on substantial, yet elegant structures, filled with numerous plants representative of all sorts and conditions of vegetation. The houses were built by Messrs. Mackenzie & Moncur, and when this is stated there is little need to add that they are perfect in construction, ventilation, and heating arrangements. The range has a southern exposure, and consists of a large central cool conservatory with two corridors on either side, from which branch off at right angles four span-roofed houses devoted respectively to succulents, economic plants, Orchids, and stove plants. The entire range is not completed, for there are end houses to be constructed, where old buildings stand at present used as ferneries, but work like this cannot be completed in a day. Teak is employed throughout, and the framework strengthened by ornamental iron brackets, combining strength with lightness. The houses, which are painted a light green inside, have central beds with paths around and stages for pot plants. The beds are about 4 feet in depth, and are filled with soil suitable for the requirements of the various classes of plants. Thus that employed in the succulent houses consists largely of sand, broken stones and bricks; large plants of *Agaves*, *Aloes*, *Cereus giganteus*, *Euphorbias*, are here, while various night-flowering *Cereus* clamber about. A large specimen of the slow-growing *Dracæna Draco* is noteworthy, while *Nolina* or *Beaucarnea recurvata*, which has a fine head of pendulous foliage, is very graceful. *Agave attenuata* has now opened its yellow blossoms.

The economic houses are perhaps the least interesting of all to the casual visitor. Great virtues are, however, hidden beneath the contour of some of these unattractive-looking plants. That is why they are here. The *Granadilla* is making rapid growth towards the flowering stage. Rubbers, spices, medicinal food, and other plants useful to man, are to be found in the economic houses.

Then, in the central conservatory a place is found for many greenhouse subjects both common and uncommon. The central bed is devoted to *Rhododendrons*, among which a large plant of *R. arboreum*—an original seedling raised by the late James Cunningham, Comely Bank, Edinburgh—rises pre-eminently. The best plant, however, in the house is a large specimen of an ornamental *Cape Rush*, the beautiful and feathery *Restio verticillatus*. There are beds of *Acacias*, *Camellias*,

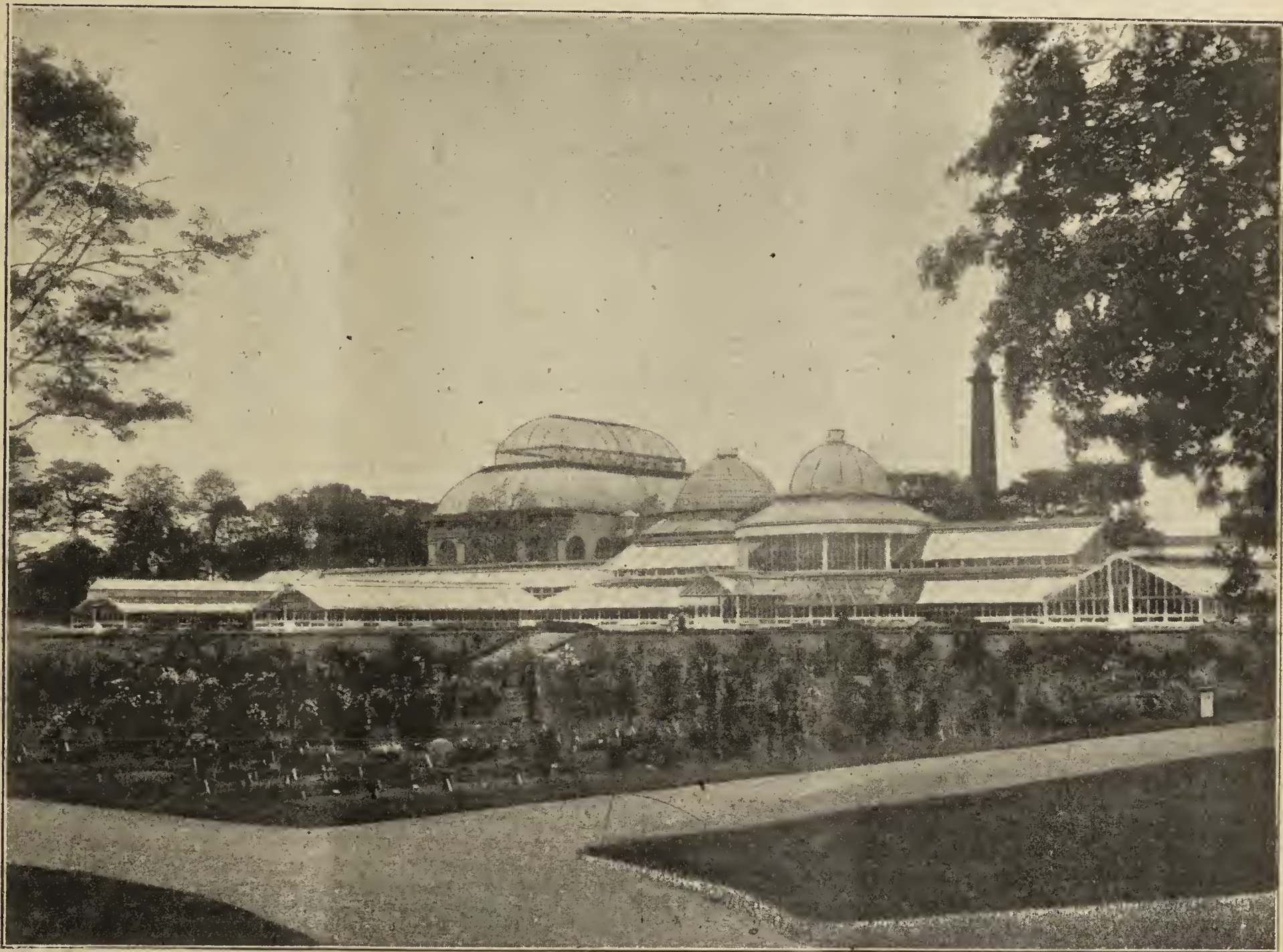
Myrtaceous, and other things, all of which were planted in the spring of 1897.

Serving as an entrance porch is a small house occupied by plants of insectivorous fame. They are planted out amongst peat and sphagnum, supported on teak rafts contained in tanks. These are filled with water to saturate the compost, and are then emptied. *Sarracnias* grow very freely in this manner, and are now sending up numerous flower spikes. During summer these plants, assisted by *Droseras* and *Dionæas*, destroy thousands of insects.

The Orchid houses always contain something of interest, and many of the plants pass the whole year here; others, such as *Dendrobiums*, are grown in smaller back houses. Underneath the stages are tanks of water to increase the atmospheric moisture, while at the sides of the

roof of the tropical house. Other Palms of large size are *Pritchardia pacifica*, *Scheelea butyracea*, and *Arenga saccharifera*. *Acanthorhiza aculeata* is an interesting Palm, having roots on its stem. The Cycads have a bed to themselves, and well do they deserve it, for their growth is very fine, as is also that of the Screw Pines or *Pandanus*, which are growing into large masses. A lean-to extension round this house was the first thing taken in hand when the improvements began, and the space obtained allowed of three large front beds, also suitable staging for stove pot plants.

The temperate house lies to the west, adjoining the preceding one, and is rectangular in shape. There are four beds with intersecting gravel paths. This house is 100 feet in length, 60 feet wide, 72 feet high, with an arched iron roof, and has four galleries, two inside and



PLANT HOUSES, ROYAL BOTANICAL GARDENS, EDINBURGH.

path several species of *Encharis* grow and flower well. In all the plant structures the stages are covered with gravel, and in the Orchid houses for the most part the plants are raised above this by being placed on stages, supported in metal receptacles filled with water.

In the stove bed are many of the newer Palms, also *Terminalia angustifolia*, a very handsome plant when young. The cooler end of this house chiefly boasts of *Begonias* of all sections. The corridors contain many good subjects; they appear at their best, however, in late summer. At the present time *Grevillea glabrata*, a grand specimen with numerous drooping shoots, is commencing to blossom. The brilliant scarlet *Cestrum Newelli* and the showy white *Viburnum macrocephalum* also grace the view.

In the background of the photograph may be seen the two highest houses in the garden—namely, the tropical Palm stove and the temperate house. Both are of iron, and the beds of soil are 5 feet in depth. A magnificent *Sabal umbraculifera* fills a portion of the domed

two outside. It cost £6500, having been completed in 1858, and was first occupied with tropical plants, but later on, in order that it might contain Tree Ferns, and the more tender Conifers, the temperature was reduced, and heat only used in winter. *Archontophoenix Cunninghami*, *Cocos Romanzoffiana*, *Cocos plumosa*, *Livistonia chinensis*, and *Seaforthia elegans* are among the tallest. Of numerous Tree Ferns a robust *Cyathea medullaris* is specially good. There are some well-shaped, lofty specimens of half-hardy Coniferous trees, such as *Araucaria brasiliensis*, *Dacrydium cupressinum*, *Juniperus bermudiana*, *Phyllocladus trichomanoides*, and *Damara australis*. *Cobaea scandens*, the well-known free-growing climber, with purple flowers, festoons the galleries. Messrs. Mackenzie & Moncur have recently erected houses for *Nepenthes*, *Bromeliads*, and Mexican plants, also two propagating pits. These lay between the front range and the Palm house, so are not seen from the herbaceous ground, where this view was taken, and part of which appears in front.—D. S. FISH.

Royal Caledonian Horticultural Society.

Annual Spring Show, April 3rd and 4th.

(Report by Telegram.)

THE Royal Caledonian Horticultural Society is one of the oldest in the United Kingdom, for it was founded in the year 1809, at a time when horticulture was far from being recognised as a power in the land. From that time till the present day its work has been interrupted, and its Council has included some of the best gardeners and commercial horticulturists that Scotland can boast of. Periods have come, as they do to all societies, when the Council could truly refrain Dickens' expression—"Hard Times." But these have been safely passed, and the society two years ago had a new charter granted to it, at which time "the house was put in order," as the late Mr. Malcolm Dnnn, V.M.H., then said. On all hands there are signs of new efforts being made, and all Scotsmen at least will wish to see success attend these efforts. The annual spring show is being held as we go to press, yet by the modern invention of telegraphy we are enabled to send a report of this large Scottish exhibition to all parts of the land a few hours after the judges have finished their work of adjudication.

After the severe weather we have experienced within the last few weeks it is refreshing to see the Waverley Market so bright and attractive as we find it this morning. It brings home to one's mind very forcibly that the gardener nowadays is, so far as the forcing of early spring flowers is concerned, independent of the weather. From information kindly supplied by the secretary, Mr. P. Murray Thomson, S.S.C., we find the entries total 503, as against 531 of last year; 570 in 1899, and 535 in 1898. It will thus be seen that the last four or five years have shown a very near approximation to one another, so far as entries are concerned; on the other hand we find there is a slight falling off in the entry for pot plants, while in the vegetable classes there is a slight increase. In the amateurs' section the entries compare favourably, the figures being 47 for this show, as against 44 of last year.

From a scientific point of view, we regret that Dr. MacDougall is not forward with the very interesting entomological exhibit which he had at last year's show. One of the most prominent and conspicuous features of the show are the collections of forced hardy Rhododendrons, as also are the nurserymen's collections of Coniferous trees and shrubs. Our English friends, Messrs. Barr & Sons, and also Mr. H. J. Jones, are, unfortunately, not forward this year, but their place is most creditably filled by one of our own local nursery firms, to wit, Messrs. J. & A. Glass, of Newington, who come forward in a new rôle, and set up an exceedingly attractive table, 40 feet in length, containing nearly 200 varieties of Narcissi in pots.

The judges officiating to-day are:—Mr. Wilson, Public Parks, Glasgow; Mr. Taylor, Broxmouth Park; Mr. Street, Floors Castle, Kelso; Mr. Thompson, Philiphaugh, Selkirk; Mr. Buchanan, Penicuik House; Mr. Cook, Gosford; Mr. Campbell, Gourrock; Mr. Leath, Morningside; Mr. Morrison, Archerfield; Mr. Wann, Kennet; Mr. Greive, Redbraes Nursery; Mr. Tait, Balcarres; Mr. T. Lunt, Keir; and Mr. Smith of Oxenford. The Edinburgh Postal Band supplies the music to-day (Wednesday), and to-morrow their place is taken by the Royal Engineers (Fourth Division Vol.).

Competitive Exhibits.

For a circular table of plants 12 feet in diameter Mr. McIntyre, The Glen, Innerleithen, is awarded first place. He shows some very fine Hippeastrums (Amaryllis), Odontoglossums, grand Cyclamen, &c. Mr. Geo. Wood, Oswald House, Edinburgh, is second with a most gracefully set-up table. In his case he shows amongst Orchids some very fine Odontoglossums. Caladiams, and Hippeastrums are also shown.

For a table of Orchids there is but one entry, which is set up by Mr. Mitchell, Bantaskin, Falkirk, who has a very fine display.

The class for ten forced plants in bloom finds the first place awarded to Mr. McIntyre, The Glen, and the second to Mr. James Bald, Canaan House, Ratho, who respectively show fine collections of Rhododendrons, Roses, Clivias (Imantophyllums), and other things. For six forced plants, distinct kinds, Mr. McIntyre is again first with a fine Rhododendron, a pretty Azalea, Lilium, &c.; the second is given to Mr. D. Mathieson, Kinellan, who shows Viburnum, Azaleas, and Rhododendrons. For six stove or greenhouse plants in flower, Mr. Geo. Wood again takes first place with a very fine lot of highly creditable specimens, Mr. M. McIntyre coming second, also with handsome specimens.

For two greenhouse Rhododendrons Mr. McIntyre is given first place, his large specimen white variety being very fine. The second place is awarded to Mr. D. Kidd, Carberry Tower, Musselburgh, who also shows two handsome plants.

For three Azalea indica, Mr. McIntyre again has an easy win with wonderfully developed plants, and Mr. Bald, Canaan House, is second

with good specimens, but hardly so well flowered. For one specimen Azalea Mr. McIntyre is once again the leading winner, having a beautiful plant one mass of white blooms; Mr. J. Bald follows as second. Mr. McIntyre is awarded first for four distinct Orchids with very fine samples, and the second place goes to Mr. John Mitchell, Bantaskin, Falkirk, who also shows choice varieties.

For three exotio Ferns, distinct, Mr. G. Wood worthily receives the first award; while for three Adiantums there is but one entry, and the prize devolves to Mr. J. Pearson, Rockville, Murrayfield. The entry for six table plants brings Mr. A. Knight, Millersneuk, the first place, he having very neat plants, and beats the redoubtable McIntyre. The class for six dwarf British Ferns is always interesting, and Mr. Steward of Belwood is on this occasion first with a very pretty lot; Mr. J. Cruickshank is second. For six single hardy Primulas Mr. Reid of Ashiesteil, Selkirkshire, is first, as usual, with a fine show lot, and second place is given to Mr. J. Holmes of Winton Castle, Pencaithland.

The Cyclamen class (nine pots) furnishes an attractive feature of the show, and fine cultural samples are in evidence. Mr. McIntyre is given first place with a very fine lot, and Mr. R. Stewart comes in for third place, there being no second. For three pots Hippeastrums (Amaryllis) Mr. McDonald, Cardrona, Peebles, beats Mr. McIntyre, from near the same part of the country.

For six pots of Polyanthus Narcissi, Mr. A. McInnes leads off, followed by Mr. J. Pearson; while in the Tulip section, for six pots, the first place is secured by Mr. A. Farquhar of Stenton House, Dunkeld; and Mr. A. Brydon succeeds for the second place. For the twelve Hyacinths, first Mr. A. Brydon, and second Mr. R. Lawrie. For three Cinerarias the first is Mr. G. Wright, Pinkieburn; and second Mr. T. Cook, Gosford.

CUT FLOWERS.—We find Mr. M. McIntyre appearing again for twelve trusses of greenhouse flowers, who has a really beautiful assortment; Mr. J. Mitchell follows as second prizeman. Then for twenty-four Roses first is given to the well-known grower, Mr. G. Manson, Wall House, Bathgate; and second to Mr. D. Kidd, Carberry Tower, both of whom show beautiful blooms. For twenty-five distinct varieties of Daffodils the first place is won by Mr. J. H. Cumming, Grandtully Castle, Perthshire, who sets up a very meritorious and nicely staged collection; the second place is given to Mr. A. Cook, The Lodge, Ratho, who also shows a fine lot. For twelve varieties Narcissus Mr. James Bald is first, and Mr. J. Cumming second.

NURSERYMEN.—For twenty-four hardy evergreen shrubs Messrs. Cunningham & Fraser of Comely Bank are first, and second Mr. John Downie, Beechhill Nurseries, Murrayfield. For twelve Japanese Maples, first Mr. J. Downie, second Messrs. James Dickson & Sons. For twelve Azalea mollis, first Mr. J. Downie, who is also the premier winner for twelve Ghent Azaleas, and again for twelve table plants; Messrs. J. Geddes & Co., Murrayfield, being here second. For twenty-four Hyacinths the leading place is given to Mr. Campbell from Gourrock, and second to Messrs. A. Kerr & Sons, Dumfries. Mr. A. Campbell wins for twenty-four Tulips, Mr. John Downie being second.

Non-Competitive Exhibits.

What is recognised to be the largest trade exhibit of forced and foliage plants over seen in Edinburgh, is arranged at the Aquarium end of the market by Messrs. R. B. Laird & Sons, Ltd., from Pinkhill Nurseries, Murrayfield. The group has been woven together for artistic effect, and the effort is certainly successful. Standard Aocias, Lilacs, Staphylea colchica, Cytisus of sorts, Japanese Acers, Azaleas, and many dwarf-flowering plants furnish a varied and select group. Clivias and very fine ornamental Ivies are likewise included.

Mr. John Downie, from Beech-hill Nurseries, Murrayfield, has, as usual, a very excellent group of forced and foliage plants arranged for artistic effect. The handsome and imposing tree Pæonies, standard and bush Cytisus in many varieties, together with forced Lilacs, Azalea mollis, Laburnums, bulbous and greenhouse plants, are the chief subjects, composing a really tasty exhibit.

Mr. John Forbes, nurseryman, Hawick, N.B., has the prettiest and most effective exhibit yet seen of his renowned novelty Begonia Caledonia. This is interspersed with the type Begonia Gloire de Lorraine, bringing into prominent relief the practical utility of this novelty, which is doubtless a grand acquisition. The splendour of the effect produced by the judicious blending of the pure ivory white flowers of Caledonia, and the lovely rose carmine-coloured flowers of Gloire de Lorraine, as seen in the exhibit, is such as to fix a very good impression. Each is alike in height, habit, floriferousness; and, in fact, every respect except colour. For a background to this fine exhibit Mr. Forbes has a most interesting and choice collection of tree Pæonies in distinct varieties, well grown and in full flower, testifying to their value as attractive subjects for conservatory decoration when brought on by gentle forcing. The exhibit is displayed in Mr. Forbes' best style, and his plants are exceedingly well grown.

Messrs. Cunningham & Fraser set up a very neat table of early spring alpine flowers, amongst which are some pretty Primulas, Scillas, and other early flowering plants.

Messrs. Shanks & Son, Ltd., Dens Iron Works, Arbroath, and London, are showing a selection of their horse and hand lawn mowers in various patterns and varying sizes.



Jottings on Pines.—Suckers that were recently potted indicate the rooting by starting into growth, and the young roots are very tender, hence liable to injury from the effects of too much bottom heat. If the heat at the base is more than 80° raise them, placing some loose tan under and around the pots, but do this without chilling the roots. Afford water as required, yet only when there is need for a supply. It is very important that Pine plants be grown without check, not allowing the suckers to become much root-bound before shifting into larger pots or the fruiting size. Therefore bring the requisite fibrous loam under cover, breaking it up when in good working order into good sized lumps, and thus dried and warmed potting may be proceeded with when the suckers are well rooted. In potting ram the loam firmly round the roots, plunging at once in a bottom heat of 90° to 95° until the roots have permeated the soil, when they should only have 85°, which is suitable for successional plants, with a night temperature of 60° to 65°, ventilating at 80°, and closing at 85°, lightly sprinkling the plants occasionally. Fruiting plants and those near the flowering stage should have a night temperature of 65° to 70°, and 75° by day, with 80° to 90° from sun heat, closing at 85°, damping all suitable surfaces in the house at the same time.—PRACTICE.

The Decay of Copse Culture.—The "Globe" thinks that the cultivation of copse wood, that forms a conspicuous feature in the landscape of many of the southern counties, is not the least hardly hit branch of the farmer's industry. Consisting of Hazel, Ash, Alder, and other saplings clustering thickly from a close-cropped stump, the wood of these copses furnished till late years a considerable revenue. The trimming was done on the spot during the cutting of the copses, which were then left to themselves for a term of years till they had grown again; and the trimmed sticks were largely used to supply the wooden bands which formed the binding of the small rough casks in which sugar and other foreign produce was distributed about the country. Now, however, merchants have largely ceased to import their sugar in quantities too bulky for retail distribution; and with this improvement the need for repacking into smaller receptacles has disappeared, and with it one of the chief markets for the copse wood. Add to this the increasing rarity of labourers skilled in trimming it, and the fact that though this operation only comes once in several years, it is a lengthy and expensive business, and we have the reasons why at the present day the copses are being left more and more to run wild, and their produce used, when eventually cut down, chiefly as Pea sticks and firewood, which is all it is often fit for, if not cut at the right period.

Why do Apples and Other Fruits Drop?—What makes the Apples drop in the spring? asks Professor Burrill of Illinois. The answer is difficult, though we may approximate it. It is a truth generally accepted that leaves and fruits and twigs cut themselves off by a process of growth in the living tissue, and if we can stop that process with the leaves, the leaves stick fast. You know that if you cut a tree down in midsummer the leaves will hold on to it. That is because the process by which the leaf is cut off has been arrested. But if the tree stands till autumn, and growth is not arrested, the leaves become mature and will themselves fall off. The cutting of the twig is always done at one place. Now if we take a Fuchsia in good condition and put into that pot some illuminating gas, in about twenty-four or thirty-six hours we find these leaves falling down. They have cut themselves off on account of the presence of the gas. What is it that has done it? The effect of the gas has been to stimulate and hasten the process of cutting off. Now it may be that in some cases you have used sufficient poison on the trees to stimulate this cutting off process, and the result has been centred on the stems of the growing Apples. It is fortunate that the fruit does fall off to some extent. What would happen to the tree if a part of the fruit did not fall off? Think how many blossoms there are in a single cluster, and then imagine them all developing fruit. I think that in many cases the falling off of the fruit is only a provision of Nature to thin the fruit which was at first present in too great quantity, though sometimes we may carry the thinning process too far.

Forestry Notes.—Recently planted trees will require an occasional look to in the way of tramping the soil firmly around the roots to prevent wind-shaking, and possibly in the case of larger specimens stakes may be necessary to effectually steady them in the ground. Rank-growing grasses must be kept short around small transplants, and weeds of every kind should be cut over before the production of seeds. In the home nursery a good deal of attention will require to be given to seed beds and recently lined-out trees and shrubs, for a change of weather will often act injuriously should the watchful eye and hand of the nurseryman be relaxed. During cold east winds a few Spruce branches will oft save a bed of tender seedlings, while watering in exceptionally dry and warm weather must never be forgotten. Needs of all kinds will require careful attention, compost heaps should be turned and mixed with lime, and an eye should be kept on insect pests which at this time of the year not infrequently commit considerable damage amongst young Coniferous trees.

Apple Lamb Abbey Pearmain.—For nearly a century the Apple Lamb Abbey Pearmain has been doing its duty as a useful, long-keeping dessert Apple, and it has been honoured at last. Do not be filled with pangs of jealousy, ye old Wellingtons and Blenheims, and the rest of you that may not have yet been honoured. Your time will come sure enough, if some considerate individual will only pluck a fruit of you, and place it on the table before the committee of experts that sits fortnightly at Westminster. If the old variety in question is worthy of an award there must be a good many more of merit sufficiently high to be similarly honoured, if growers will bring them forward. It would not be a bad idea to issue a list of the old varieties that have been granted awards of late, as a guide to intending exhibitors. It might prevent the same kind being sent twice over, and would be helpful in making selections of those that have not yet been presented. There is no fear of the work of the Fruit Committee growing lighter if all old varieties of fruit are to be considered.—H. H.

A Note on Tomatoes.—It seems only a few years since Tomatoes were grown in private gardens more for the novelty than anything, and frequently most of the fruit was wasted. But that was before the million had cultivated the taste for the comely Love Apple, and now we see a different order of things. Thousands of pounds are invested in Tomato culture at home, tons of fruit are imported from abroad, varieties have been improved, and in every establishment Tomatoes are amongst the subjects that must be grown. And the Cucumber has suffered in consequence. The amateur with his single glass house will have his few Tomatoes, and the Cucumber is driven into a corner by itself or not grown at all. In the cottage garden, too, due care is bestowed on the outdoor Tomatoes, illustrating the hold it has on the taste of all classes. People eat Cucumbers still, and will probably continue to do so, but they clamour for Tomatoes, preferring English when they can be got, but accepting the foreign produce as better than nothing. Cucumbers to attract customers in anything like the same manner have to be fresh and inviting.—G. H.

Cold Storage of Fruit and Vegetables.—Through the kindness of the Worcester Cold Storage Company, writes Mr. James Udall in the fifth annual report of the Droitwich Experimental Garden, I was able to experiment, upon a small scale, with a few Apples, Pears, Plums, and Runner Beans. These were placed in the chambers on Sept. 7th. In two hampers were placed 18 lbs. of Pershore Plums and 16 lbs. Prince of Wales Plums. The least ripe were placed by themselves at the bottom, a sheet of paper over them, then a layer of hay with a sheet of paper over it, and the remainder of the Plums fully ripe; too ripe, in fact, for the purpose. On October 20th the whole were taken out and found in the following condition. The ripe Plums constituting the upper lot in each hamper were wholly bad; the lower layer in each case had about 50 per cent. sound. In addition there were 4 lbs. of Mallard, 4 lbs. of Liegel's Apricot, and 3 lbs. Black Diamond Plums placed in separate shallow boxes. The Mallard Plums were over-ripe, the others were slightly under-ripe. When taken out of the stores and opened the Mallard were nearly all decayed, but Diamond and Liegel's Apricot were as fresh as when placed in the stores. Of Lord Grosvenor Apples there were 24 lbs., and 10 lbs. of Williams' Bon Chrétien Pears came out equally sound and fresh, the Pears being not quite ripe. Clearly fruit may be kept sound under such circumstances provided it is sound, dry, and not fully ripe at the time of placing it in the stores. The Beans did not keep, having been put in in damp condition.



Cucumbers.

THE advice given by Mr. W. Iggulden, page 223, on the cultivation of Cucumbers, has a sound and practical ring with it, and doubtless many failures may be traced to the causes he describes. The notes in question set me thinking, and comparing the interest once taken in the culture of Cucumbers in private gardens with that displayed at the present time. The decision I arrived at is, that the homely Cucumber has had its day. Mr. Iggulden connects it with the salmon season, and for the sake of that dainty it must still be grown, but the man in the street no longer prizes the Cucumber as he once did. Perhaps it is because the market grower has reduced it from the level of a luxury to a cheap commodity; or it may be that digestive organs are not what they used to be. I think, rather, that the wonderful popularity of the Tomato is accountable for the decline of the Cucumber, for there is no doubt which has the greatest hold on public taste.—H.

The Briton and his Commercial Rivals.

THE bogey of "made in Germany," and the reiterated cry that British commerce is being worsted in every market of the world, lead me to ask for a little space in your columns to place before your readers one or two reasons why they need not give way to feelings of despair, or even despondency, over the situation. By the articles which are published from day to day in newspapers and magazines, our foreign trade is made to appear decadent, while that of Germany and America is shown to be as rapidly growing. "Give a dog a bad name and hang him." Tell the whole world day by day that the Briton is a degenerate, and that his German and American rivals are cutting him out, and the prophets will bring about the fulfilment of their own forebodings; merchants and manufacturers will become discouraged, and capitalists will look abroad for more promising fields in which to invest, and then we may write "Ichabod" over the gateways of our custom houses. A great number of writers take it for granted that Germans and Americans have made relatively far greater progress than Britons during the past twenty years; indeed, the opinion of some of the authorities in the symposium on this subject, held in a monthly review this month, clearly is, that Britain has lost its supremacy in the field of foreign commerce, and that it has fallen into a second or third place, behind Germany or America. I have seen enough of German and American factories and institutions to fill me with respect for them, yet I have felt no uneasiness concerning our own prospects. It may be all very well to attempt to spur on the British manufacturer to greater endeavour by warning him of what his rivals are doing, but exaggeration, and in many cases false statements, are not justifiable. With your permission, I would like to lay the following broad statement of facts before your readers, so that they may draw their own conclusions, from official data:—

The annual gross exports of merchandise from the U.K., Germany, and the U.S.A., as given in the statistical abstract of the Board of Trade, divided among the inhabitants of the respective countries, during the period from 1879 to 1899, split up into three equal terms of seven years.

	United Kingdom.	Germany.	U.S.A.	Germany and U.S.A. combined
	Total exports per capita.	Total exports per capita.	Total exports per capita.	Total exports per capita.
Periods.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
1879 to 1885	8 4 1	4 17 5	3 2 2	7 19 7
1886 to 1892	8 0 11	4 8 4	2 14 1	7 2 5
1893 to 1899	7 9 0	3 12 2	2 18 9	6 10 11

The above decreases are due to the fall in value of late years; the actual volume of trade has, of course, greatly increased.

Besides showing that the Briton is doing more, man for man, than his two great rivals combined, the above statement proves that he is increasing his lead. In the foregoing the export business only has been taken into account, and, moreover, no credit has been claimed for the great preponderance of the British shipping and financial interests, in which this kingdom is *facile princeps*.—Geo. J. S. BROOMHALL, 9, Adelphi Terrace, Strand, W.C., 25th March, 1901.

[We are pleased to publish our correspondent's communication, because we are entirely at one with him in his views regarding the ultimate results that will almost certainly accrue from the repeated whines regarding the decadence of British commercial enterprises.—ED.]

Late Keeping Culinary Apples.

I NOTICE in the last number of the Journal an article upon this subject by "G." Everybody has his own opinion about which are the best late Apples, and I will give my selection before concluding this note; but what I wish to point out is, that I think "G." cannot have the true Northern Greening, or he would not say that it is a vigorous grower. The old Northern Greening is a capital keeping Apple and a good cropper, but makes one of the smallest orchard standards of the cooking varieties, and the fruit is so small that no one thinks of planting it to-day. The improved variety, New Northern Greening, is much superior, and in the Midlands is a very fine Apple, although it does not succeed so well in the South. Your correspondent says that Northern Greening and John Apple are synonymous, and I see that Dr. Hogg gives John Apple as a synonym for Northern Greening, and also for Winter Greening. Under the latter heading is given the name of French Crab, a name which is more familiar to most of us than Winter Greening. Now French Crab is entirely distinct from John Apple, as much so as is Northern Greening. The old John Apple does not resemble these in the least, but has a flattened outline and an open eye, whereas Northern Greening is more or less conical with a closed eye, and French Crab has also a closed eye. However, one need not pursue this further, as most of these varieties belong to the past, and are not likely to come to the front again whilst we have such Apples in cultivation as those which are largely planted to-day. If I were to make a selection of the three best winter Apples for profit and quality combined, I should say Lane's Prince Albert, Newton Wonder, and Bramley's Seedling are far away the best. Dumelow's Seedling (which our correspondent calls Wellington, although we have a Wellington Apple which is entirely distinct) is doubtless the finest of all cooking Apples; very few people would disagree about this, but it is not a heavy cropper, and does not succeed in all situations. For quality I think Beauty of Kent, Alfriston, and Bramley's Seedling, in the order named, would take a good deal of beating as late cooking Apples. For many years I have advocated the keeping of late cooking Apples for sale at this time of the year. Many people say it is a mistake, but my neighbours are now making 12s. a bushel of Newton Wonder and Bramley's Seedling, which is quite double the price they were worth before Christmas, so that they are perfectly satisfied with the result of storing their fruit.—A. H. PEARSON, *Lowdham, Notts.*

Stable Manure versus Artificial.

I BEG to differ from Mr. J. J. Willis, as I fail to see how in any way the statement I made on page 135 "makes his case stronger." What is his case? It is clearly stated in a sentence on page 258, and is as follows:—"Artificial fertilisers are more readily available to plant growth than the best made farmyard dung." I think all the teaching of the Journal, whether it be in articles or discussions, is to enable practical men to understand something more of the work in which they are engaged. Let us in dealing with this question keep that object in view, for I see no reason why the teaching of anyone should be despised, as we do not write with the object of belittling each other, but with the idea of gaining information. A statement to be of any practical value to growers should not be based on theory, but on facts. Now, where are the facts on which Mr. Willis bases his assertion that "artificial fertilisers are much more readily available to plant growth than the best made farmyard dung?" He brings forward no facts. He brings forward a theory based on certain Rothamstead experiments, and I say these experiments are very unsatisfactory and cannot prove anything; and now I will try and prove my statement. A field at Rothamstead is divided in ten plots, and each of these plots—the soil being very similar in character—are dressed with various kinds of manures, one receiving none. Plot 2, in 1876, received 14 tons of dung, and yielded 85½ cwt. of Potatoes. Plot 9 received no dung, only 3½ cwt. of superphosphate; but, strange to say, yielded 121 cwt. of Potatoes. Why all this increase? Mr. Willis explains it by saying there was available nitric acid in the soil of No. 9 plot; but surely if your correspondent says there was available nitric acid in the soil of one plot he must admit its presence in other plots, in fact all through the field; if he does not, then the experiments were useless, and should never have been quoted in support of his case. But I find this is not the only puzzle concerning these experiments. Here is another. No. 9 plot, with a dressing of 3½ cwt. of superphosphate, and the assumed available nitric acid in the soil, yielded 121 cwt. of Potatoes. No. 3 plot was also dressed with 3½ cwt. of superphosphate, but in addition it received 14 tons of dung, and then there was the available nitric acid, and what was the yield?—106½ cwt. of Potatoes. If we take these two plots as teaching anything it is this—that it did more harm than good to apply the dung, for the yield of Potatoes was less. This is the only natural conclusion we could come to from these two facts, and is one of the things which show how unsatisfactory the result of these experiments were; and it is upon records like these that Mr. Willis tries to prove the slow action of dung compared with artificials. The greatest puzzle of all is why your correspondent only brought forward experiments on Potatoes, and omitted others. Was it because they prove that farmyard dung acts or produces as much as artificials? Here are a few:—Barley, plot 7

every year 14 tons of farmyard manure, average yield for 21 years 48 bushels; plot 5 every year receives 275 lbs. of nitrate of soda, 400 lbs. silicate of soda, 200 lbs. sulphate of potash, 100 lbs. sulphate of soda, 100 lbs. sulphate of magnesia, and $3\frac{1}{2}$ cwt. of superphosphate, and



NARCISSUS CYCLAMINEUS.

yields $48\frac{1}{2}$ bushels. There are others quite as interesting, but I think this will suffice.

So much for theory; now for a more practical view. Everybody who grows crops knows that they cannot be grown successfully unless they manure the land with good farmyard dung. Now in practice the dung has proved itself to be the best fertiliser we have, but Mr. Willis says artificial fertilisers are more readily available for plant growth than the best dung. What does he mean by artificial fertilisers? Basic slag is a very slow acting artificial, and there are plenty quite as slow, and even if we go to artificials containing nitrogen, like dried blood and fish meal, your correspondent knows that these are slower than farmyard dung. The artificial manures, which act most quickly on plant life, are nitrate of soda and sulphate of ammonia. In actual practice we find very little difference in their action on our crops, so now for a little experiment. Mix a small quantity of quicklime with a little sulphate of ammonia, and the result is a strong smell of ammonia. Mix a small quantity of quicklime with some good farmyard dung, and the result is a strong smell of ammonia. This, then, is what our experiment teaches. That sulphate of ammonia and farmyard dung yield ammonia when mixed with quicklime, and as there is scarcely any difference in practice between the action of nitrate of soda and sulphate of ammonia, we can say that dung is as readily available to plant life as artificial fertilisers; and, what is more, while artificials stimulate a plant into vigorous growth, and then leave it to starve unless the dose be repeated, farmyard dung supplies food to the plant as required, besides forming one of the best rooting mediums in nature. Nothing that man can invent will ever take the place of good dung. Artificial fertilisers are all very well in their place, but where is their place? They are supplementary manures, and can be nothing more. They are useful for feeding plants when it is impossible to apply farmyard manure, as in pot or border culture or on crops when they are growing, but that is all.—W. D., Herts.

Daffodils for the Rockery.

It is a matter for surprise that the dwarfer Narcissi are not more often met with in the pockets and niches of the select rockery than they are. During the spring, when rock-flowering plants are conspicuous by their absence, the little Narcissi nod and dance in the breeze, and tend to lighten up their surroundings with a golden sheen of wonderful beauty. The delightful golden yellow flowers of *Narcissus minor*, *N. nanus*, and *N. lobularis*, as also the beautiful Cyclamen-flowered Daffodil (*N. cyclamineus*), are each deserving of the most

prominent position, and should be extensively planted. *N. minimus*, the most diminutive Daffodil in cultivation, is of peculiarly interesting beauty, on account of its various forms and its flowers of a rich deep yellow. For the more sheltered positions one might include *Narcissus triandrus albus* (Angel's Tears), with its prettily shaped, cylindrical funnel, and pendant pure white flowers; added to which are the reflexed perianth segments, which make the flower so beautiful. It often bears from two to four flowers on a stem, and seems to prefer a gritty soil and good drainage.

The Hoop Petticoat Narcissi (*N. Corbularia*) are moisture-loving with the exception of *N. Corbularia Clusi* or *monophylla*, which requires a warm sunny position, and ought also to be planted in almost pure sand. A moderate supply of water may be given when the flower scapes appear. The flowers are snowy white and extremely handsome.

N. Corbularia citrina, or sulphur Hoop Petticoat, and *N. C. conspicua*, the yellow one, having golden yellow flowers, both delight at the base of the rockery, where the moisture is more prevalent, especially during the growing season. *Narcissus pallidus præcox* flowers very early, but is very variable in size and form, and is, moreover, one of the Ajax or trumpet section, with sulphury white to pale straw-coloured flowers. The common Jonquil, with its delicately scented golden yellow flowers, is extremely showy when planted in large clumps of



NARCISSUS CORBULARIA VAR. MONOPHYLLA.

twelve or more, and is very free flowering. The same may be said of *Narcissus juncifolius*, a beautiful Rush-leaved species from the Pyrenees. It has rich yellow flowers.

These charming Narcissi may be naturalised in the rockeries with advantage with such alpine plants as *Herniaria glabra*, various Mossy Saxifragas, Thymes, and Spergulas. These form a sort of protection to the bulbs, and furnish a foil to throw up the full beauty of the dainty Narcissi flowers, upon which too much praise can hardly be elaborated.—W. L.

Societies.

Scottish Horticultural Association.

The monthly meeting was held on Tuesday, 2nd April; Mr. M. Todd, in the absence of the president, in the chair. Mr. Cumming, the gardener, Grantully Castle, read a very attractive paper on "Spring Bedding," detailing in rapid succession the various hardy spring plants suitable for bedding and maintaining a display of blooms from 'early spring, merging into the summer bedding. An interesting discussion ensued by a large number of members present, and hopes were expressed that the city gardens in Edinburgh would, under the régime of Mr. McHattie, the new city gardener, be made to illustrate the beauties of spring gardening. It was agreed to make the annual excursion to Donibristle. Several very interesting exhibits were on the table, including a seedling Rhubarb, very early and hardy; *Cineraria stellata*, &c.

Irish Gardeners' Society.

This Dublin society held an unique competition on Thursday last at their quarters in D'Olier Street. The feature of the evening was a pruning competition; branches of aged trees were fastened in conspicuous places in the hall, each competitor was to prune his trees into shape with a view to fruitfulness. There were four competitors. Messrs. Dick, Bridgeford, and the president, Mr. O'Kelly, undertook the responsibility of judging. It was compulsory for each competitor to read an essay on the essentials of pruning, and each of them showed a good grasp of the subject. The winner was Mr. Campbell, foreman at Lord Iveagh's, Farmleigh, who also pruned the best, yet faults could be detected. Miss Douglas was second, and Mr. Richardson, Abbeyville, third. A certificate of merit was awarded to Mr. Reid, The Gardens, Montrose, who used the secateurs in preference to a knife, but his over-confidence lost him a place. The trees comprised Apples and Pears.

Shropshire (Shrewsbury) Horticultural Society.

By a clerical error in our review of the schedule of prizes to be awarded by the Shropshire Society for competition at the society's show in August next at Shrewsbury, we stated that a silver cup was to be awarded as the first prize in Class 24. The prizes are:—1st, a silver cup of not less than £5 5s. in value, and £15; 2nd, £12 10s.; 3rd, £10. Intending exhibitors whose schedules may not have the notice of the cup inserted will please make a note of the fact. The hon. secretaries are Messrs. H. W. Adnitt and W. W. Naunton, The Square, Shrewsbury. The annual report and statement of accounts comes to hand. The committee expresses itself as satisfied with the results of last year's horticultural fête. Even though the weather was so unpropitious during the two days in which it was held, the attendance was not perceptibly diminished, and the accounts show that the total receipts are not very far below those of the previous year. The Grapes are mentioned as having been very fine, and as having attracted as much attention as usual. A reference is made in the report to the obligation the society is under to the railway companies for their cordial co-operation and excellent arrangements.

Reading and District Gardeners' Association.

An interesting evening was spent by the members of the Reading and District Gardeners' Mutual Improvement Association on the occasion of the visit of the Rev. G. H. Engleheart of Appleshaw, to speak upon "The Narcissus." The attendance was exceedingly large, and the meeting was presided over by the president, Mr. L. G. Sutton. The lecturer, in introducing his subject, drew attention to the great industry that had sprung up in connection with the Daffodil, mentioning that he had himself seen at Plymouth as much as £1200 worth of blooms in one train for the London markets. The Narcissus had attained its present position as a market flower owing to it coming into bloom in the open air when other outdoor flowers were at a discount, for it could be put on the market sometimes in March, and always in April. It travelled well, as the blooms would keep fresh for days if they had been placed in water a few hours previous to packing. Then followed interesting remarks as to the homes of the wild species, and consideration of the soils in which they grew, after which the garden history of the plant was touched upon, reference being made to the work done in the days of the past by such men as Dean Herbert, Leeds, Backhouse, and Barr. The features of the leading varieties were then explained, also the modes of crossing, and a few hints on culture given. Owing to the lateness of the season only a few Narcissus were staged. The chief exhibit was a group of splendidly grown *Cineraria stellata*, shown by Mr. C. P. Cretchley, The Honey Gardens, Twyford, who was awarded the association's certificate.

Bristol and District Gardeners' Mutual Improvement Association.

The last meeting for the session was held on April 1st at St. John's Parish Room, Redland, when a lecture was given by Mr. G. Brook on "Flowering Shrubs." For cutting purposes they cannot be surpassed. For what we usually term summer bedding Mr. Brook urged that more attention should be paid to this section of plants, which by their hardy character and decorative value were worth being used in this direction much more frequently. He suggested some methods of arrangement and planting to secure the best effects, and

gave a long list of varieties always likely to bring good results, urging that in that neglected branch of the gardener's work more attention should be paid to the soils for planting, and treatment of the subject afterwards, especially in the matter of pruning. A brisk discussion followed, and Mr. Brook was heartily thanked for his lecture. Prizes offered for spray for lady's dress and two buttonhole bouquets were secured by—First, the Lord Mayor, Mr. C. Colthurst Godwin (gardener, Mr. McCulloch); second, Mr. F. Tagart (gardener, Mr. Binfield); equal third, Mr. W. Howell Davies (gardener, Mr. Curtis), and Mr. H. Kitley. Certificates of merit went to Mr. Spry (display of *Cineraria* blooms), Mr. W. M. Wills, gardener, Mr. Frampton (*Cattleya Trianae*), and Mr. Jennings (*Dendrobium nobile*).

Devon and Exeter Gardeners' Association.

"Methods of Propagation" was the subject of a lecture before the above, given by Mr. J. Mayne of Bicton Gardens at a recent meeting. He said that plants from seed were more healthy and vigorous than from any other source of propagation, but on the other hand they could not always depend upon their coming true, though at the present time they were much nearer the goal than ever they could have hoped owing to their selection of the very best varieties. In a great many instances the best time to sow the seed was as soon as it was ripe, but there could be no doubt spring was the most natural time. Spring and early summer when the soil is fairly moist, and each day is getting warmer, were all in favour of germination. It was after some few weeks of very hot dry weather during summer that there was the greatest difficulty in getting many seeds to germinate, though a lot could and should be done in the way of soaking the drills some few hours previously to sowing the seed when the soil was in a parched condition. Again, they could assist Nature by soaking certain kinds of seeds in warm water for twelve or more hours. It was much wiser to have the soil fairly moist before sowing, as a great many seeds if watered immediately after sowing failed to come up at all. Propagation by division was best done in autumn or spring just as growth was starting. Propagation by runners is a very expeditious way of increase. Only one should be taken from the runner, and this nearest the parent plant, and the joint should be pinched out of the runner so as to throw the sap into this one plant. Wet weather suits runners much the best. Layering is usually performed on large shoots or branches by being bent down and brought into direct contact with the soil. A cut should be made in an upward direction nearly halfway into the shoot, which should be pegged into the soil, care being taken that the slit was kept open. Generally speaking this was best performed about October, especially among hardwooded plants.

Royal Horticultural Society—Scientific Committee, March 26th.

PRESENT: Dr. M. T. Masters (in the chair); Messrs. Hogg, Drury, Houston, O'Brien, Holmes, Bennett, Readle, Saunders, Michael, Salmon, Worsley, Odell, E. im Thurn, Bennett-Poë, Douglas, Rev. W. Wilks, Prof. Boulger, Dr. Müller, and Rev. G. Henslow, Hon. Sec.

Cattleya monstrosa.—Dr. Masters described the specimen sent to the last meeting as follows:—The flower is dimerous, in having two sepals, a lip and a lateral petal, and a normal column.

Cypripedium illustrations.—Mr. G. S. Saunders showed a series of beautifully executed water colour drawings of malformations in the flowers of this genus as follows:—The entire absence of one or both side petals; the entire absence of the labellum, its presence in a distorted form, and its partial or entire duplication; one or both side petals partially, or entirely, taking the form of the labellum; the side petals joined to the upper or lower sepals; the upper and lower sepals joined together; one side petal adhering to the labellum; the lower sepal adhering to the labellum; a duplication of parts; a double flower, caused by the adherence of two flowers; a flower showing the two lower sepals separate which are generally joined together in this genus.

Acotyledonous members of Amaryllidaceae.—Mr. Worsley gave some account of his observations as follows:—"Among Amaryllidaceae acotyledonous species occur in the genera *Crinum*, *Hymenocallis* (*Elisena*), and probably in *Griffinia* and several *Andine* *Pancratia*. I do not think it is constant even in one species. Among the *Crinums* it occurs occasionally in *C. Moorei*; frequently, or almost invariably, in *Ismene* and *Elisena*, but rarely, if ever, in *Hymenocallis* true. Plants from regions of annual droughts gain advantage by immediately forming a bulb at some depth under the soil, which will not break into growth until the rains return, and will thus commence their annual growth at the best time." In the absence of specimens and illustrations it was impossible to form an opinion as to the peculiar and anomalous conditions described, as acotyledonous plants are unknown to botanists in this family. Orchids and parasites, &c., Dr. Masters observed, are without cotyledons, because the perfect embryo is not formed. Mr. Worsley also described the usual curvature of the radicle, or "geotropism," characteristic of all seeds germinating in the ground. He also described how a bulb will be formed at the bottom of the flower pot. This, Dr. Masters remarked, was probably the well-known formation of a "dropper," so common in Tulips, &c., the new bulb being formed on a leaf-sheath.

Ferns, anomalous.—Mr. Drury exhibited the following remarkable specimens:—Fronds of *Polystichum angulare* var. *sinuosum*, sent by

Rev. H. Kingsmill Moore, Dublin. It is an unique variety in having all the fronds evenly sinuous at short intervals in the plane of the frond. In this respect it is quite distinct from the several flexuose forms already found, they being generally distorted, a fact which in pressed herbarium specimens is masked by pressure. The fronds exhibited were unpressed, as received. The Fern was found wild many years ago in Ireland by Mr. Davey.

Hybrid Orchids.—Mr. Douglas brought some hybrids "for the purpose of showing that Orchids which flower naturally at the same period of the year produce satisfactory results, whereas if crosses are effected between species that do not naturally flower at the same period, the results are unsatisfactory." As an example of the latter he referred to *Lælia* × *Briseis*, a cross between *Lælia purpurata* (pollen parent) and *L. harpophylla* (seed parent). He observes, "The seed did not germinate freely; two plants only were obtained from what seemed a very satisfactory capsule. The Orchid Committee thought it worthy of an award of merit. Both plants are natives of Southern Brazil. *L. harpophylla* produces its flowers under cultivation in February and March; its flowers are small, 2 to 3 inches across, of a bright cinnabar-red colour, and altogether unlike the gorgeous *L. purpurata*, with coriaceous leaves 12 to 15 inches long, having flowers 6 to 8 inches diameter of an amethyst purple colour. The only trace of this colour in the progeny is a slight tinge on the lip, and in no respect is there anything to lead one to the conclusion that *L. purpurata* was the parent. The plant is very much larger in all its parts than *L. harpophylla*, but not nearly approaching even the intermediate size of *L. purpurata*, either in flower, leaf, or pseudobulbs. Can any reason (other than the fact that the two species do not flower at the same season of the year) be shown that the seedling is not intermediate between the two parents?" He also exhibited flowers of *Cymbidium eburneo-Lowianum*, with flowers of the seed parent, *C. Lowianum*, and of the pollen parent, *C. eburneum*. "In this case the two parents naturally produce their flowers at the same time, and the result of hybridisation is entirely satisfactory. The pseudo-bulbs and leaves are as intermediate as are the flowers. The flower spikes are longer than those of *C. eburneum*, but not so long as in *C. Lowianum*. In the one case the result was disappointing, in the other very satisfactory; moreover, it has been asserted that such results are to be expected. May I ask why?"

Dendrobium leaves spotted.—Mr. Douglas remarks:—"The leaves of *Dendrobium*, freely covered with black decayed spots and blotches, have puzzled me greatly. I had a few plants sent here which developed the disease, and it speedily spread to my own plants, which were quite healthy. I lost several altogether, as it is also developed on the stems. There does not seem to be any fungus on the diseased parts, and yet by no manner of treatment can I get rid of this pest."

***Cattleya Trianae*, monstrous.**—Mr. Douglas observes:—"The flower of *Cattleya Trianae* was sent to me by the Rev. Francis D. Horner. It is abnormal as regards colour, but it has been constant for six years."

Turmeric tubers.—Mr. Holmes exhibited fresh specimens, an unusual condition, as a marketable product they always arrive dried. They are the old tubers of *Curcuma longa*; the young ones are white, and contain starch.

Plants from Botanic Gardens, Cambridge.—Mr. Lynch sent the following interesting species: *Arctotus*, sp. n., a fine plant, sent to Cambridge by Mr. Gumbleton. It somewhat resembles *A. glaucophylla*; *Melaspheerula graminea*, a curious and graceful Irid, charming among bolder flowers. There are two forms, one having pale yellow flowers and is rare; the other with darker tinted blossoms. **Hybrid *Sarracenias*.**—These showed variations of colour, according to those of the parent species as follows: *S. purpurea* × *S. flava* = *Stevensi*; *S. rubra* × *S. purpurea* = *Chelsoni*; *flava* × *Stevensi* = *illustrata*; *Chelsoni* × *illustrata* = hybrids sent. ***Laportea moroides*.**—This plant had a large bunch of Mulberry-like fruit, but paler in tint. It bore numerous stinging hairs, the leaf also resembled that of the Mulberry tree. It belongs to the tribe *Urticæ* of *Urticaceæ*. It is figured, "Bot. Mag.," 1889, t. 7057, and is a native of N. Queensland, where it is said to cause the death of horses. ***Deherainia smaragdina*.**—A native of Mexico; a tree of the order *Myrsinæ*, remarkable for its dark green flowers, the corolla having chlorophyll. There are foliaceous, rudimentary stamens alternating with the petals, as in Brookweed (*Samolus*) of the allied order *Primulaceæ*. The anthers are extrorse, debiscing, while forming a central, erect column, but spreading on the petals subsequently. It is figured in "Bot. Mag.," t. 6373. **Fungi.**—Mr. Lynch also sent some specimens of *Peziza lanuginosa* (described as *Sepultaria Sumneriana* in Masee's "Fungus Flora"), growing in the grounds of the Botanic Garden.

Bog Oak Find in the Fens.—An interesting and very fine specimen of bog Oak has been brought to light, as reported by a daily paper, on Yaxley Fen, near Peterborough. Its stem is about 80 feet long, 38 feet of which is without a branch. The tree is remarkably sound and perfect. The spot where the discovery was made was the site of the famous Whittlesea Mere, which covered 1500 acres, and was artificially reclaimed to agricultural purposes half a century ago.

Liverpool Spring Show.

THE fifteenth show of this association opened most favourably as regards weather, and also from the fact that the financial state is in a much more flourishing condition than has been the case for many years. St. George's Hall presented a scene of varied colour, with superbly cultured plants, sufficient to satisfy the most critical amongst the distinguished company present. Amongst the visitors were the Lord Mayor and lady, Arthur Crosthwaite, Esq., and Mrs. Crosthwaite, and many leading inhabitants of the district.

The show was one of the best held for many years, the groups of plants staged by Messrs. Cromwell and Bracegirdle and the hardy forced plants from various sources being quite an advance on what one usually finds. Nor would it be wise to omit mention of the four magnificent exotic Ferns staged by Mr. Cromwell, the finest effort he has ever made, of the wonderful plant of *Angræcum sesquipedale* from Mr. Bracegirdle, the gorgeous *Hippeastrums* (*Amaryllis*) from Mr. Johnson, gardener to Mrs. G. W. Moss, Aigburth; and the grand *Cyclamen* from Mr. T. Ankers, gardener to Alderman W. B. Bowring, J.P., Aigburth, all of which stood out in bold relief. Messrs. R. P. Ker and Sons of Aigburth had a special table of their well-known *Hippeastrums*, many novelties being amongst them.

Messrs. Dickson, Ltd., Chester, gave one of their feasts of Daffodils, exquisite in every way; while Messrs. John Cowan & Co., Gateacre, staged the cream of Orchids; Messrs. Rowlands, West Derby, a large display of well grown Hyacinths, &c.; Messrs. T. Davis & Co., Wavertree, a good stand of seasonable flowering plants and bulbs; Messrs. Isaac House & Sons, novelties in Violets; and Mr. Edwards of Nottingham with his table decorations. All the trade received certificates, as did Mrs. Stevenson of Pembroke Place for plants grown in a greenhouse ensconced among the chimney pots on the roof. Mr. C. A. Young, West Derby, also for group of the great American Carnation, Mrs. T. W. Lawson.

Competitive Exhibits.

For twelve Hyacinths Mr. T. Hitchman, gardener to Arthur Earle, Esq., J.P., Childwall Lodge, had a stand so superior as to require little judging. *Galatea*, Captain Boyton, Lady Derby, Grand Maître, Electra, Mountain of Snow, Lord Roberts, La. Grandesse, Cardinal Wiseman, King of the Yellows, King of the Blues, and *Esperanza* were all splendid. Mr. E. R. Finch, gardener to Jos. Smith, Esq., Newstead, Wavertree, was a very fine second; and Mr. F. C. Keightley, gardener to Mrs. Duncan Prizett, Grassendale, a good third. The entries for six Hyacinths, three in a pot, was a distinct gain for Mr. Finch, with dwarf, heavy spikes. Mr. Holford, gardener to B. Arkle, Esq., West Derby, followed with taller spikes of first quality. Mr. J. Heaton, gardener to R. P. Houston, Esq., M.P., The Lawn, Aigburth, had the best six distinct.

For twelve pots Tulips Mr. Keightley staged a superb lot, including *Keizers Kroon* (two), white *Joost Van Vondel*, *Proserpine* (two), *Ophir c'Or* (two), *Rose Lnisante*, *Vermillion Brilliant*, *Duchesse de Parme*; Mr. E. R. Finch was a close second, and Mr. Hitchman third. For six pots Mr. E. R. Finch staged a very choice selection, Mr. Keightley being second. A good competition ensued for six pots double Tulips, the award going to Mr. W. Bustard, gardener to J. McClelland, Esq., being an undoubted first with *Tournesol*, *Golden Tournesol*, and *Murillo*, Mr. Finch being second. The latter won with a very heavy stand of *Polyanthus Narcissi*.

For a group of miscellaneous foliage and flowering plants an old exhibitor was gladly welcomed in the person of Mr. B. Cromwell, gardener to T. Sutton Timmis, Esq., Cleveley, Allerton, and in praise of such excellent work, it was acknowledged on all sides that rarely, if ever, has better grouping been seen. Every plant appeared with telling effect, a canopy of charming red and yellow Roses being admirably introduced over dwarf well-flowered Callas, the necessary Palms forming a grand background, and smaller plants worked to the front. Quite beautiful, too, was the close second prize, one from Mr. Bracegirdle, gardener to Alderman Watts, Elm Hall, Wavertree, the best skill being brought to bear on the work. More of colour was the third prize, one from Mr. Bustard, gardener to J. McClelland, Esq., St. Ann's Road, Aigburth. Stove and greenhouse plants were splendidly shown by Messrs. Bracegirdle and Cromwell. For a single Fern, two Palm classes, three Orchids, a single Orchid, and greenhouse *Rhododendrons*, Mr. Bracegirdle made a great display, taking every prize. The remaining *Rhododendron* classes fell to Mr. E. R. Finch, who also had extra good Callas, *Mignonette* (trained), and superior greenhouse Azaleas. The class for six forced hardy plants was particularly good, Mr. Cromwell having a set so well staged and grown as to fully entitle him to premier honours. Messrs. Hitchman and Bustard were extra good for remaining places. *Azalea mollis* from the latter were superb, and *Freesias* from Mr. Heaton were literally wreathed with flower. *Cinerarias* and *Primulas* from Mr. Lyon, gardener to A. Mackenzie Smith, Esq., Bolton Hey, Roby, were perfection. Lily of the Valley (good), from Mr. J. Wilson; table plants, &c., and fine specimen Azaleas from Mr. Cromwell, were all of them most telling.

Two only entered for the table of miscellaneous bulbs and foliage plants, and the greatest praise is due to Messrs. C. Osborne (gardener

to Percy Jackson, Esq., Ullet Road, Sefton Park), and T. Wilson. The ten pots of hardy herbaceous plants were staged much lower than usual, which was quite correct, too, for otherwise Mr. Finch's brilliant display would have been seen disadvantageously. A choice bouquet came from Mr. C. Osborne, but the baskets of flowers were of the very poorest description. The attendance was good throughout the day. The luncheon, presided over by Mr. J. Foster, was noted for the hopeful speeches uttered regarding the association's welfare, the usual votes being tendered to the committee.—R. P. R.

Royal Horticultural Society of Ireland.

The Etiquette of Awarding Prize Money.

WE place before our readers the following letters from Mr. Brock relating to an interchange of communications between him and the Royal Horticultural Society of Ireland, with the hope that our friends, and particularly those from across St. George's Channel, may express their opinion on either side of the question as laid before them in the letters we publish. We reserve our own opinion, and do not hold ourselves responsible for the subjoined letters of our correspondent. He writes:—

As the circumstances attending my resignation as a member of the above society are peculiarly interesting to exhibitors and members, I shall be glad if you will allow me to place the facts before your readers, which I shall do as briefly as possible. I have been a subscribing member to the society for several years, and in 1898 was honoured by being elected a member of the Council. My first experience of the society as an exhibitor was at the show held in November last, when I competed in three classes for Japanese Chrysanthemum cut blooms, winning the society's silver medal, the Waterhouse challenge cup, and £16 in cash. On the 23rd January I received from the secretary a cheque payable jointly to my employer and myself, which I promptly returned, with a request that it should be made payable to myself, a course of action which had the full approval of my employer, who, the Council knew perfectly well, was not a member of the society. This reply of mine was responded to by the subjoined letter of the secretary to the society, which proposed to enforce conditions so humiliating that I feel confident they would be repudiated by any exhibitor possessing the least spark of manliness.

The following is the reply referred to:—

61, Dawson Street, Dublin, 14th February, 1901.

DEAR MR. BROCK,—You must wonder at the cause of the delay in responding to your letter of the 23rd ult., returning me the cheque for £16. We had not a finance meeting until Tuesday last, when I drew a fresh cheque, payable to you, in lieu of the one returned. I laid it before the committee for signature, but before signing it they thought it better for me to write to you and ask you to kindly obtain for them Captain Nicholson's authority for so doing. The Council regret having to adopt this course, but feel justified in doing so owing to the repeated unpleasantness from time to time occasioned by the exhibitors not being recognised in the matter of the awards.—Yours faithfully,

W. H. HILLYARD, *Secretary.*

Mr. Peter Brock.

Then followed Mr. Brock's reiterated protest:—

Glenmor, Drogheda, 1st March, 1901.

W. H. HILLYARD, Esq., *Secretary*

To the Council of the Royal Horticultural Society of Ireland.

61, Dawson Street, Dublin.

GENTLEMEN,—As a member of the Council I strongly protest against the highly objectionable manner in which the Finance Committee have sought to settle the prizes awarded to me at the last Chrysanthemum Show, through my employer, for whom I act, and to whom I am accountable, and who does not recognise that they had any right to go beyond me in the matter. Such a policy is unlikely to be conducive to the welfare of the society, or to tend in fostering that friendly relationship that should exist between the Executive and gardeners who take an interest in the society, and in many ways contribute to its support. Doubtless there may be cases where it would be advisable to adopt such a course, but even then only if so directed by the exhibitor. The qualification to compete at the shows of the society without paying entry fees, existed in my membership. The Finance Committee, on behalf of the society, accepted my annual subscriptions and my entries, without requiring, or asking for the authority of my employer, who is not a member of the society. Now, that a few pounds are due to me for prizes, they have assumed a jurisdiction as to how the awards should be settled, by forwarding a joint cheque between my employer and myself, which they signed, and which reached me on 23rd January. I promptly returned it with the request that it should be made payable to myself. On 14th February Mr. Hillyard wrote intimating that he had drawn a fresh cheque for me, and laid it before the Finance Committee for their signature, but that they declined to sign it, and had directed him to write to me and obtain for them Capt. Nicholson's authority for the action which I had taken. In my reply I repudiated the idea of asking Capt. Nicholson for such a favour as they requested, which on the face

of it implied, that neither as his servant, or even as a member on the Society's Council, could I be trusted, and I directed him to write to Capt. Nicholson direct and ascertain from him whether I was authorised to receive the money referred to. He subsequently wrote and obtained the desired authority, but the excuse for so doing does not justify the action, and it still appears to Capt. Nicholson to be an extraordinary course to adopt, bearing in mind that he has no connection with the Society, and consequently had never made any complaint whatever. The Waterhouse challenge cup arrived here on 19th February, directed to Capt. Nicholson, but he refused to take the custody of it direct from you and thus deprive me of the privilege of presenting it to his care. I also declined to have the custody of it, and by his direction I returned it to Messrs. Waterhouse on the day following its arrival. With reference to my subscription for the current year, which is not yet paid, I beg to inform you that I have no intention of continuing to be a subscribing member, and thereby render myself liable to what I consider further insults from the Finance Committee of the Society, and I respectfully request that you be good enough to eliminate my name from its Council and membership, and that you publish same with report of meeting of Council at which this is received.—I remain, gentlemen, yours respectfully,

PETER BROCK.

The Council's explanation was posted on the 14th March, 1901, as follows:—

DEAR SIR,—I am directed by the Council to acknowledge receipt of your letter on the 1st inst., bearing on the subject of previous correspondence relative to the prizes awarded Capt. Nicholson at the last winter show, and to express the Council's extreme regret, that in consequence of their action in the matter, which was rendered inevitable, as already pointed out, in consequence of the Council being repeatedly brought to task over paying prize money direct to gardeners, and ignoring the exhibitors in whose names the entries were made, and by whom the exhibits were shown, should have caused you to take such an extreme course. Nothing was further from the desire or intention of the Council than to cause you annoyance or incite an unfriendly feeling between you and the society. In the case under discussion the entry form was filled in in the name of Capt. Nicholson, and the Council, feeling their responsibility to him, while still prepared and anxious to pay you the money, if so authorised, thought it better to adopt the course they have done. The Council sincerely trust that on further and more impassionate consideration of the whole case, having regard to the explanation already given, you will see your way to withdraw your resignation of your seat on the Council, and continue your membership, and allow the same friendly connection that have so long existed between you and the society to remain unimpaired.—Yours faithfully,

W. H. HILLYARD, *Secretary.*

Mr. Peter Brock.

The finale:—

Glenmor, Drogheda, 16th March, 1901.

DEAR SIR,—In reply to your letter of the 14th inst. re the exhibits in Capt. Nicholson's name at the last winter show. The Council seem to overlook the fact that they did not at the time the entries were made require him, as the exhibitor, to be a member in accordance with rule 6, or in accordance with rule 7, and pay entry fees. The entries were accepted on the qualification of my membership, and from me as his trusted agent in the transaction. The entry forms are similar to others I have filled, but have never at any time been questioned as to my authority to receive the prizes won at any show. As no published rule on the subject exists in your society, if this course was rendered inevitable, as a member of the Council I should have been made aware of it before such a measure was adopted. What other exhibitors have done in the past does not justify the action of the Council in my case, as, apart from being well known, the fact that I was also a member of the Council entitled me to expect more consideration from them. With reference to the reconsideration or withdrawing of my resignation, I beg to inform you that I have no intentions of continuing to be a subscribing member of the society, or have any connection with a Council that would act in such a manner.—Yours faithfully,

PETER BROCK.

W. H. HILLYARD, *Secretary R.H.S. of Ireland.*

Our correspondent contrasts the action of the "Royal" with other horticultural societies in Ireland—notably, the Ulster Horticultural Society and the Newtownards Horticultural Society—and adds: "It is not difficult to understand why the societies in the north are such successful and flourishing institutions, as compared with the one in Dublin."

Famous Yew Tree on Fire.—A dastardly attempt to destroy North Lancashire's venerable Yew tree is reported from Cark-in-Cartmel. The tree stands on the Birkley estate, near to Cark, and is one of the sights and novelties of the district. It is over 1000 years old, and is said by Stockdale, in his "Annals of Cartmel," at one time to have been one of the landmarks for vessels coming up Morecambe Bay. The fire was discovered recently by a young lad at half-past seven one evening, and was extinguished by Mr. Crewdson, a resident of Birkley. Early the following morning, however, the tree was again in flames, and the members of the Cark Fire Brigade put out the fire. Very grave damage has been done to the Yew.



Hardy Fruit Garden.

Outdoor Figs.—*Planting.*—The Fig succeeds well when planted against a warm sunny wall or gable end, and the branches are trained thinly. The soil which suits Figs best is a calcareous loam on a subsoil of chalk. A subsoil of this character insures good drainage, which is very essential, as stagnant moisture caused by an ill-drained situation induces a strong sappy growth which is certain to be of an unfruitful character. In addition to the right texture and ample drainage of the site chosen for planting, the soil should be made very firm, as this will encourage short-jointed wood to be made, which is readily ripened. To a soil otherwise suitable as regards fertility and friability, but not containing calcareous matter, add lime rubbish. Manure must not be added to the soil at planting time, but a mulch in summer may be afforded over the roots. A border restricted to 6 feet in width will be ample for Fig trees.

The present is a suitable time to plant, selecting maiden trees with one stem. After taking out a wide shallow hole make the base firm, and on it spread out the roots, which should be carefully pruned, so that no broken or injured ends are retained. Work the soil among them, but see that the ends are not turned up but kept in position at full length. This is readily managed if the material is spread over them from the stem outwards. Make firm as the work proceeds, and finally when finished. The stem of a maiden tree may, after planting, be shortened to 15 inches. On breaking into growth select a well placed shoot on each side, and train at full length, encouraging a strong and free growth. The following season shorten these shoots, and train from each two others at equal distances to form main branches, from which successional bearing shoots may be trained at full length. These, after fruiting, can be cut back, so that each season a new growth is made for fruiting the next.

Pruning Old Trees.—The main object is so to thin out the shoots and branches that no crowding is apparent when the trees come into leaf. First cut out the old and weakly growths, retaining only the best placed and short-jointed shoots, which lay in at full length, the fruit being borne at the extremities of all such well ripened growths. In positions where it is desired a new growth should be originated, leave a bud at the base of the growth removed. In other cases cut it out entirely, which will prevent the tree being filled with superfluous growth. Much may be done by disbudding when the buds start, to limit and regulate the number of growths. Adequate space and abundant light and air are necessary for each shoot, to insure a well ripened condition by the end of the growing season.

Strawberries.—*Mulching.*—The spring mulching of manure may now be placed between the rows of old plants. First go over the beds and fork out any perennial weeds, and slightly point over with a fork the space between the rows not occupied with roots. If, however, there is any difficulty in effecting this without destroying fibrous roots it is better to allow the ground to remain undisturbed, and apply the mulching. In any case the latter may consist of rich manure, long and short combined. Previous to mulching sprinkle round the plants a peck of soot to the rod. Guano, 1 oz. to the square yard, may be used instead, while to plantations that need some quick incentive to growth an application of nitrate of soda, $\frac{1}{2}$ oz. to the square yard, affords good results. Recently established beds, whether planted in autumn or spring, should not at present receive a mulching of manure. They will derive more good from frequent hoeings to kill weeds and promote growth. The autumn established beds may be allowed to flower this season, but spring beds are scarcely in a condition to fruit this season, hence when the flowers appear on the plants remove them, and encourage a good growth to build up bold crowns for the next season.

Grafting Fruit Trees.—The cold weather during March has kept fruit trees from commencing growth, hence the time when the operation of grafting should be carried out is later than usual. Immediately, however, the sap begins to rise and the buds to push, the stocks may be prepared in readiness to receive the scions.

The best method of grafting for general purposes is crown or rind grafting. By this method large, old, healthy, but fruitless trees may be headed down and worked with better varieties. Branches more than 1 inch diameter may be worked, the larger admitting of several grafts being placed on one stock. The branches should in winter have a preliminary shortening, and be again shortened just prior to the grafting at a point where the bark is smooth. To prepare the stock make a slit in the bark downwards 2 inches long, cutting just through the bark.

The scions ought to be well ripened shoots of the previous year, having the buds quite dormant, which is ensured by cutting the scions early and laying them in moist soil in a cool position until the present

time. The central portion of the shoot is best for a graft, retaining four buds to each. In preparing for insertion make a slanting cut the same length as the opening in the stock, and at the upper edge make a transverse cut inwards, thus forming a small shoulder, which enables the scion to be securely seated in its position on the stock. The union of the stock and scion should be as complete as possible by exactly joining the inner barks on both sides if practicable, but one side at least. Then secure the grafts firmly with raffia grass and cover all joinings, using clay or grafting wax.

Fruit Forcing.

Cucumbers.—Shading may be necessary in the middle of the day for an hour or two in bright weather to prevent flagging, but with the plants healthy and the roots abundant very little will be necessary, always provided they are properly supplied with water and nutrition, and free from pests. Water plants and the houses abundantly when required, keeping plenty of moisture in the atmosphere all day by frequent damping, syringing the plants both ways about 3.30 p.m., closing the house at the same time. To secure tender crisp fruit maintain a night temperature of 65° to 70°, 70° to 75° by day, advancing to 85° or 90° from sun heat, and an increase to 100° will not do any harm after closing. In watering plants in pits and frames do it early in the afternoon, so as to get the foliage dry before nightfall. Maintain a good bottom heat by linings renewed as required. Ventilate early and moderately, husbanding the sun's heat by early closing, and employ a thick night covering over the lights. Avoid overcrowding, keeping the shoots stopped to one joint beyond the fruit, and remove bad leaves as they appear. Keep young plants near the glass to insure a sturdy growth. Sow seed for raising plants to occupy frames after forced vegetables, salading, or bedding plants are removed. Wireworms are sometimes troublesome, coming in with the turf, and as the grass is dead they are usually ravenous; they cannot resist baits of Carrot, Turnip, Mangold Wurtzel, or Potatoes cut into thick slices and inserted in the soil a couple of inches, examining the bait every morning. Millipedes and woodlice are equally fond of these vegetables, though woodlice prefer Potato wrapped in a little hay, examining them daily.

Peaches and Nectarines.—*Earliest Houses.*—The very early Peaches, Alexander and Waterloo, Advance and Cardinal Nectarines, have completed the stoning process, and are closely followed by Early Louise Peach and Early Rivers Nectarine. These very early varieties should be grown in a house by themselves, so that when the stoning is completed the fruit may be accelerated in ripening by an increased temperature; but it is not advisable to exceed 65° at night, or 70° to 75° by day from fire heat, because the growths are liable to become attenuated when the atmosphere is warm, close, and moist. It is different under sun heat, as evaporation is going on, and assimilation taking place to a much larger extent, therefore the temperature may be kept at 75° to 85° through the day from sun heat, ventilating at the top of the house at 75°, and opening the front at 80°, so as to secure a circulation.

To prevent moisture being deposited on the fruit, and "spot" induced, it is advisable to leave a chink of air at the top of the house constantly. Close the house at 80°, and sufficiently early to allow a rise to 85° or 90°, the trees being syringed and surfaces well damped, so as to secure atmospheric moisture, which will cause the fruit to swell to a great size, Alexander and Waterloo Peaches reaching 10 inches in circumference. Employ clear rain water for syringing, and have the fruit dry before nightfall. Cease syringing the trees directly the fruit commences ripening, otherwise the skins become rough or cracked, and then they are spoiled in appearance, and have a musty flavour when ripe. A genial condition of the atmosphere should be maintained, for the benefit of the foliage, by damping the floor twice a day, and keeping the mulching on the borders moistened as it becomes dry.

The second early varieties, Hale's Early, A Bec, Early Alfred, Dr. Hogg, and Rivers' Early York Peaches, with Rivers' Early, Lord Napier, Goldwin and Darwen Nectarines, started in December, have scarcely finished stoning, and they must not have a temperature exceeding 60° to 65° at night, and 70° to 75° by day with gleams of sun, allowing 5° to 10° more from sun heat, with a free circulation of air. Stirling Castle, Royal George, Dymond, Crimson Galande, Grosse Mignonne, and Bellegarde, all Peaches carrying a high colour combined with first-class quality, and unrivalled for forcing, all points considered, are still later in stoning, as also are Stanwick Elrue, Dryden, and Humboldt Nectarines; therefore, when a number of varieties are grown in the same house, the temperature must be regulated so as to suit the later varieties. Attend to the border for watering, mulching with sweet, rather lumpy manure, about an inch thick, and afford liquid manure when necessary, or top-dressings of fertilisers washed in, but avoid encouraging sappy growths by excessive and needless supplies. Stop or remove all gross growths before they have time to draw the supplies of sap from the weaker parts of the trees, but allow leading shoots, particularly of young trees, to extend over uncovered parts of the trellis, pinching out their points when the fruits begin to take their last swelling, or they may be left their full length when sturdy and short-jointed. Remove the leaves over or in front of the fruit, and turn the latter up to the light, by thin laths placed across the trellis, with the apex pointing in the direction of the most light, so that the colour may be there most pronounced, and the flesh highly flavoured.

Disbudding, and the shoots that are to succeed those now fruiting having been properly attended to, there will not be any more growths than are necessary for next year's bearing, the extension of the tree, or for attracting the sap to the fruit. Gross shoots are best removed, as they appropriate an undue amount of sap, often fall a prey to gumming, and cause unequal vigour in the branches of the tree. Pinch laterals at the first leaf. Shoots retained to attract sap to the fruit ought to be stopped in the first instance at three or four joints of growth. Endeavour to provide an equal distribution of foliage that will shade and protect the strong wood from the direct rays of the sun as the season advances, as they are liable to become sunburnt or dried, and the channels that convey the sap are thus contracted. Besides, such condition invites attacks of the Peach-boring Werberian moth caterpillar. Avoid overcrowding the foliage, not permitting more shoots than can have full exposure to light and air.

Ventilate early but carefully, avoiding depressions of temperature and cold currents. Thin the fruits where too thickly placed, not overdoing it. With the trees in good health, and not too luxuriant, the prospect of storing a full crop of fruit is more likely than when the trees are overburdened, whilst deferring thinning only takes so much size from those fruits that are ultimately allowed to remain for the crop. Inside borders must be duly watered, and may be lightly mulched with sweet, short stable manure, but not too fresh.

Trees Started Early in March.—As the blossoming is over recourse may be had to measures for the destruction of insects. Fumigation may be carefully practised, as the tender foliage and young fruits are highly susceptible to injury, an overdose skeletonising the leaves and causing the fruit to fall. Similar remarks apply to insecticides, which, if used too strong, may prove as injurious to the leaves and crop as to the insects. Syringe the trees in the morning and early afternoon on fine days, whilst in dull weather an occasional syringing, with damping of the paths and borders, will suffice. Water inside borders as required, always affording enough when any is needed to thoroughly moisten the mass of soil through to the drainage. Proceed with disbudding gradually, a little each day, and observe the same rule in thinning the fruit, rubbing off the smallest and badly placed as soon as the most prominent show signs of taking the lead. Ventilate freely on all favourable occasions, closing early with a view to utilising the sun's heat.

Latest Houses.—The trees in most cases are in blossom, and this profits by free ventilation, insures sturdiness and high concentration on the parts developing. Merely use fire heat to exclude frost and to allow ventilation during the day. When the anthers show turn on the heat in the morning, so as to raise the temperature to 50° by 8 A.M., and keep at that through the day, with a gentle circulation of air, turning off the heat early in the afternoon so as to allow the pipes to cool before night and the temperature falling to its night minimum of 40° to 45°.

Unheated houses or wall cases should be very freely ventilated in bright weather, but when the petals unfold it is necessary to secure a genial temperature by day. As a safeguard against frost the house may be closed rather early, enclosing sun heat up to 65°. Do not use water for damping down after noon, and this will prevent moisture condensing on the flowers though the night, or a little air will allow it to escape. Scrim canvas or other material over the roof is useful on frosty nights.

Phenological Observations.

APRIL 5TH—11TH.		PLANTS DEDICATED TO EACH DAY
Fri. 5	Fieldfare last seen.	Yellow Crown Imperial.
Sat. 6	Turnip fly appears.	Cluster Grape Hyacinth.
Sun. 7	Blackbird lays.	Wood Anemone.
Mon. 8	Rook hatches.	Ground Ivy.
Tu. 9	House sparrow builds.	Red Polyanthus.
Wed. 10	Small white butterfly appears.	Violet.
Thur. 11	Ringed snake seen.	Dandelion.

Next Week's Events.

- Saturday, April 6th.—Royal Botanical Society's meeting; Société Française d'Horticulture de Londres meeting.
- Tuesday, April 9th.—Royal Horticultural Society's Committees meet in Drill Hall, Buckingham Gate, S.W.; Durham, Northumberland, and Newcastle Botanical and Horticultural Society's Spring Show (two days).
- Wednesday, April 10th.—First annual Show of Daffodils and Spring Flowers, Corn Exchange, Ipswich; Shropshire Horticultural Society's Spring Show at Shrewsbury.

Trade Catalogues Received.

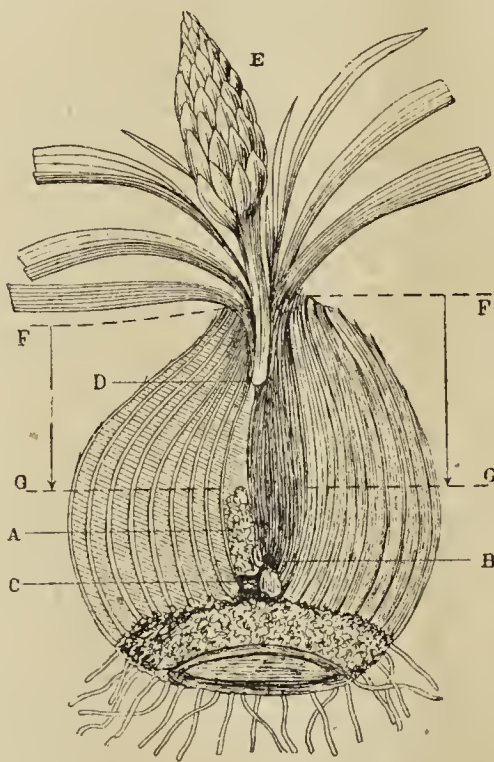
- Clibrans, Oldfield Nurseries, Altrincham.—*Garden and Conservatory Plants, 1901.*
- Hudson's Seed Depot, 34, High Road, Chiswick, London, W.—*Seeds, Hardy Lilies, and Bulbs.*
- F. R. Pierson Co., Tarrytown-on-Hudson, New York, U.S.A.—*Choice Seeds, Bulbs, and Plants, 1901.*



All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Hyacinths Casting Flower Spikes (J. R. S.).—Your case is similar to that of many others. The bulbs frequently cause disappointment in the throwing-up of their flower spikes. In some cases quite 20 per cent. of them cast their spikes when they appear from the apex of their respective bulbs. The cause of the flower spike being cast is the forcing forward of the embryonic flower (as seen at A) by the growth of foliage from the base B, the flower spike appearing before the leaf growth, and it manages to push its way through the scales, which are drawn

together for protection at the apex. The growths from the leaf bud are equally anxious to reach daylight and strive to push through the apical orifice, and being below the pips of the flower spike and the thicker part of its stem, the neck of the bulb becomes choked. Something must give way, and the matter is soon settled by the part containing the most vigour, which is the leaf growth. If the bulb-scales give way, well and good for the flower spikes; if not, then the leaf growth forces its way through the aperture, throttling the stem of the flower spike, forcing the latter out of its way and snapping the connection of the spike with the bulb at point C. Presently the lower part of the stem (D) shrivels, and the leaf growths are the better able to push the flower spike forward in their growth, and almost, if not quite out of the bulb, as shown in the



HYACINTH CASTING ITS FLOWER SPIKE.

illustration at E. This struggle may be seen among wild plants, such as *Scilla nutans*, the wild Hyacinth, the flower spikes shrivelling in their sockets, and it is a strange thing that it occurs more seldom in shady and damp places than in those that are open, sunny, and dry. The harder a bulb is grown, the longer it has been out of the soil, and the more sun-baking it has received, the tighter will the scales grasp the embryonic spike and so choke it off. Of course a well-ripened bulb keeps better, and is less apt to fungal disease or attack. The only remedy for such a case as yours seems to be to cut the bulb through the outer scales vertically downwards from F to G at planting; taking care not to injure the flower spike and growth. By this means you allow room for expansion.

Primulas Unsatisfactory (Nemo).—On some of the leaves there are evidence of the rust mite, *Tarsonemus* species, certainly the same that attacks Cyclamen, Begonias, Pelargoniums, Gesneras, Gloxinias, &c., but there is not sufficient virulency to account for the defective flowering. We should certainly remove the worst infested leaves, and spray with tobacco water, pursuing similar treatment as with the Cyclamen, in which we are pleased you have greatly benefited by our kindly assistance. It would be well to use a little superphosphate of lime and sulphate of potash, two parts the first and one part the latter, giving a pinch to each plant mixed with twice as much soil, and afford all the light possible, as this seems all the plants require to induce free flowering. About as much of the mixture as in a pinch of snuff suffices for a plant in a 6-inch pot, and it must be used at the side of the pot, not on or near the collar of the plants.

Ridding Grass Land of Coarse Grass (Idem).—The tuft of coarse grass was not recognised, but appeared one of the Hair Grasses, it being important to have specimen in flower for identification. In case the land is not of a limestone nature, we should advise, in the first instance, a dressing of lime, 5 tons per acre, placing in small heaps convenient for spreading, and slaking with the smallest quantity of water necessary

to cause fall into an apparently dry fine powder, and applying evenly whilst quite hot. This will have a good effect on the coarse grass and the organic decaying matter; and after the lime has acted for a month or six weeks, apply a dressing of salt, 10 cwt. per acre not being too much on old rough pastures. The salt is useful on limestone soils, or land to which lime has been applied, by exchanging acids with the lime and forming muriate of lime, which in its turn combines readily in the soil with the ammonia, some of which might otherwise have been volatilised as carbonate. It is rather late, however, to apply both this season, therefore the salt may be applied alone, and it will certainly sweeten the grass, and act usefully in destroying insect life and checking disease. The quantity should be 5 to 10 cwt. per acre, the former for heavy soil and the latter for light land, or the lighter the soil the larger is the quantity suitable. Ground rock salt is the best. We have no experience of "hide salt," probably the refuse in dressing hides, and therefore full of impurities.

Cypripedium siliigerum (W. Hurlstone).—The production of horns or protuberances upon the pouch must be recorded as one of Nature's freaks. Human beings and flowers are alike in many more things than we wot of, and with an abundance of good things to eat and drink the human face is apt to break out into carbuncles and pimples. The horn on the pouch of the *Cypripedium* is very pronounced, and though we have seen such horns at the base of the labellum before now, we do not recall having seen one so far up. No doubt your good treatment has caused the exuberant growth.

Destroyed Vine Leaves (W. C. D.).—The leaves and young shoots appear to be affected by what is known as browning or brunure, which is sometimes caused by a slime fungus, *Pseudoomis vitis*, but there is no microscopic evidence of this pest, though the shoots and leaves are browned or blackened, and crumpled in a manner suggestive of its attacks. In some cases similar results are produced by attacks of the rust-producing mite, *Tarsonymus vitis*, but there are no traces of this parasite. We, therefore, consider the failing of the leaves, and shoots, and bunches to be due to a sudden check, such as that produced by a close, cold, saturated atmosphere suddenly dried by an excessive admission of air, or it may have been produced by the noxious fumes arising from the combustion or rather imperfect burning of paraffin oil, though we should rather attribute it to the vapour of the oil, the house being kept close during the cold weather that has prevailed recently. Possibly the parts not affected are farther from the lamp than those that have collapsed, or the parts not being so susceptible of injury as the others. It is not likely the Vine is failing from old age, but probably there are other causes of the mischief, such as the stem being exposed and frozen, and the supplies of sap thus cut off, causing the young shoots to collapse. The stem may also have been girdled by mice or rats, or even the roots greatly impaired by some application, either directly destroying them or producing a soddened and sour state of the soil. Only investigation on the spot can settle these matters, and the hints given may be useful in furthering investigation.

Leaves Falling off Peach Trees (W. W.).—The leaves have fallen off the trees because their tissues have been injured, the protoplasmic contents of the cells being practically destroyed, and the affected parts of the leaves fall away, or in bad cases the whole of the leaf. It is caused by a sudden check, most frequently by fumigation with tobacco paper or vaporisation with nicotine compound, the leafage having the stomata suddenly affected prejudicially by the smoke or vapour, if indeed the atmosphere thus produced is not taken into the tissues and acts injuriously on the cell contents. It is simply a case of scorching, the leaves being young, and therefore easily affected by the suddenly heated and noxious conditions of the atmosphere. Of all foliage of fruit trees, that of Peaches and Nectarines is most susceptible of injury from fumigation with tobacco paper or preparations of tobacco, and vaporisation with nicotine compound acts even more disastrously, consequently we have given up these operations in Peach houses, having suffered to a great extent from the practice, even to the loss of crops; and for the destruction of green and black or brown fly have recourse to spraying or syringing with quassia extract or other of the advertised insecticides. The wood seems very unripe, and the growth from it is more liable to injury than that produced from well-ripened wood. It would be advisable to apply a top-dressing of dissolved bones, dry and crumbling, applying 4 ozs. per square yard, and pointing-in lightly. This would probably tend to the consolidation of the wood, though this depends on the texture and constituents of the soil to a great extent, it hardly being possible to have the soil too firm when light for Peach trees; nor can the trees have too much air, consistent with steady progress, in order to secure a sturdy, short-jointed, consolidated growth, this well matured being necessary to insure a good setting and stoning of the fruit.

Names of Fruits (Annie May).—Apple Winter Peach; another correspondent sent a Pear—Susette de Bavay; (C. S. & Co.).—The Apple is Barnack Beauty, which has received an award from the Fruit Committee of the Royal Horticultural Society. It is not mentioned in the late Dr. Hogg's "Fruit Manual."

Names of Plants (J. S.).—1, *Dendrobium barbatulum*; 2, *Polygala oppositifolia*; 3, *Cytisus elegans*. (F. Read).—1, *Asparagus flexuosus*; 2, *Adiantum trapeziforme*. (J. L.).—A piece of berried Sea Buckthorn (*Hippophaë rhamnoides*). (H. W.).—*Calanthe Veitchii* var. *alba*.

Covent Garden Market.—April 3rd.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, cooking, bush. ...	5	0 to 7	0	Lemons, Messinas, case	9 0 to 12 0
„ Californian, case	10	0	12 0	Oranges, case	15 0 25 0
Cobnuts, doz. lb., best ...	6	0	0 0	Pears, $\frac{1}{2}$ case	14 0 16 0
Grapes, black	2	0	3 0	Pines, St. Michael's, each	2 6 4 6
„ Dutch, lb.	1	6	2 0		

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	0 to 3	0	Horseradish, bnch. ...	1 2 to 1 6
„ Jerusalem, sieve	1	6	0 0	Leeks, bunch ...	0 1 $\frac{1}{2}$ 0 2
Asparagus (Sprue Grass)	0	0	10	Lettuce, doz. French ...	1 0 1 4
„ English, 100 ...	4	0	4 6	Mushrooms, forced, lb. ...	0 8 0 9
„ Giant, bundle ...	15	0	20 0	Mustard and Cress, pnnt.	0 2 0 0
„ Spanish, bundle.	1	9	2 0	Onions, Dutch, bag ...	5 0 0 0
„ Paris Green ...	5	0	6 0	„ English, cwt. ...	5 0 0 0
Batavia, doz ...	2	0	0 0	Parsley, doz. bnchs. ...	2 0 3 0
Beans, French, per lb. ...	1	0	1 2	Potatoes, cwt. ...	3 0 7 0
„ Jersey, per lb. ...	2	0	0 0	„ New Jersey, lb	0 5 0 6
Beet, red, doz. ...	0	6	0 0	Radishes, doz ...	0 9 1 0
Broccoli, bush. ...	0	0	1 0	Rhubarb, doz. ...	1 5 1 9
Brussels Sprouts, sieve. ...	1	0	2 0	Savoy, tally ...	4 0 5 0
Cabbages, tally ...	3	0	5 0	Scotch Kale, per bushel. ...	0 6 1 0
Carrots, doz. bnch. ...	2	0	3 0	Seakale, best, doz. ...	14 0 18 0
Cauliflowers, doz. ...	1	6	3 0	„ 2nd, doz. ...	6 0 8 0
Celery, bundle ...	1	0	1 9	Shallots, lb. ...	0 4 0 0
Chicory, Belgian, lb ...	0	4	0 0	Spinach, bush. ...	4 0 5 0
Corn Salad, strike ...	1	0	1 3	Tomatoes, Canary, case	4 0 4 6
Cucumbers, doz. ...	3	0	5 0	Turnips, doz. ...	2 0 3 0
Endive, doz ...	1	3	2 0	Turnip tops ...	0 9 1 0
Greens, bush. ...	1	0	1 6	Watercress, doz ...	0 6 0 8
Herbs, bunch ...	0	2	0 0		

Average Wholesale Prices.—Plants in Pots

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz. ...	12	0 to 13	0	Ferns, var., doz. ...	4 0 to 18 0
Acers, doz. ...	12	0	24 0	„ small, 100 ...	10 0 16 0
Aralias, doz. ...	5	0	12 0	Ficus elastica, each ...	1 0 7 6
Araucaria, doz. ...	21	0	30 0	Foliage plants, var., each	1 0 5 0
Aspidistra, doz. ...	18	0	36 0	Genistas, doz. ...	8 0 12 0
Aspidistra, specimen ...	15	0	20 0	Geraniums, scarlet, doz.	6 0 10 0
Azaleas, various, each ...	2	6	5 0	„ pink, doz. ...	8 0 10 0
Bononias, doz. ...	20	0	24 0	Hyacinths, doz. ...	6 0 12 0
Cinerarias, doz. ...	6	0	8 0	Hydrangeas, white, doz.	18 0 24 0
Crotons, doz. ...	18	0	30 0	„ pink, doz. ...	18 0 24 0
Cyclamen, doz. ...	8	0	10 0	Lycopodiums, doz. ...	3 0 4 0
Dracæna, var., doz. ...	12	0	30 0	Marguerite Daisy, doz....	8 0 10 0
Dracæna, viridis, doz. ...	9	0	18 0	Mignonette, doz. ...	6 0 9 0
Erica, various, doz. ...	8	0	18 0	Myrtles, doz. ...	6 0 9 0
Euonymus, var., doz. ...	6	0	18 0	Palms, in var., doz. ...	15 0 30 0
Evergreens, var., doz. ...	4	0	18 0	„ specimens ...	21 0 63 0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums, doz.	5	0 to 6	0	Mignonette, English, doz.	6 0 to 9 0
Asparagus, Fern, bunch	1 6	2 6		Mimosas, bnch.	1 0 0 0
Azalea, doz. bnchs. ...	5 0	6 0		Narcissus Ornatus, doz.	4 0 6 0
Camellias, white, doz. ...	2 6	3 0		" Campernelle,,	1 0 1 6
Carnations, 12 blooms ...	1 6	2 0		" Soliel d'Or ,,	1 0 1 6
Cattleyas, doz.... ..	10 0	16 0		Odontoglossums	4 0 5 0
Daffodils, doz. bnchs. ...	2 0	8 0		Primroses, yellow, doz....	1 0 1 6
Eucharis, doz.	2 0	3 0		Roses, Niphetos, white,	
Freesia, doz. bnchs. ...	1 6	2 6		doz.	1 0 3 0
Gardenias, doz.	3 0	0 0		" yellow, doz. (Perles)	2 0 4 0
Geranium, scarlet, doz.				" red, doz.	2 0 3 0
bunches	6 0	8 0		" Catherine Mermet,	
Hyacinths, doz. bnchs....	8 0	12 0		doz.	3 0 5 0
Lilium lancifolium album	3 0	5 0		Smilax, bunch	3 0 4 0
" rubrum	3 0	5 0		Spiræa, doz. bnchs.... ..	6 0 8 0
" longiflorum... ..	4 0	6 0		Stock, white, doz. bnchs.	2 0 2 6
Lilac, white, bunch,	3 0	5 0		Tulips, yellow, doz. bnchs.	9 0 12 0
Lily of the Valley, 12 bnchs.	8 0	12 0		" white " "	10 0 12 0
Maidenhair Fern, dozen				" red " "	6 0 8 0
bunches	4 0	8 0		Violets, single, doz. bnchs.	0 9 1 0
Marguerites, white, doz.				" double, doz. bnchs	1 6 2 6
bnchs.	3 0	4 0		" Star " "	1 6 2 0
" yellow, doz. bnchs.	2 0	3 0			



Agriculture in Egypt.

EGYPT, land of Pharaohs, land of Corn and Rice, of ancient cities, ancient monuments, and still more ancient people. A land where progress was—and ceased; a land just awaking up to better things, and shaking off the years of lethargy and idleness. How strange are

the impulses that stir within us as we remember its glorious past, and vainly wonder whether by any chance Egypt will reassert herself! Nations come and nations go; the wheels of time never stand still; but amid all the changes, and all the chances, the old Nile still rolls onward, and loses itself in the blue and sunny sea. Egypt without her river is a body without a soul. Those waters speak of fertility and plenty; let them fail or be cut off, the land is an arid desert.

We English are very stolid; we see nothing incongruous in the oddest contrasts. We take rail to Jerusalem; we light Rome by electricity; we bicycle o'er the plains of Marathon; we picnic as near the North Pole as we can get; and we attend agricultural shows in Cairo. A friend, knowing of our love for all things agricultural, has sent us a daily paper with some account of the show held in Cairo in January of this year. It appears the Khedive is an ardent agriculturist, and shall we say his example has made showing fashionable? Certainly it has encouraged it.

We do not quite expect to hear of an Egyptian show spoilt by bad weather; it sounds very home-like to read of a stormy morning and a soaking ground, we have seen so much of that here; but there a drying wind soon puts all to rights. The death of our good Queen cast a gloom on this show, a deeper gloom than the worst of weathers. Of course it was shorn of all public parade out of deference to the feelings of loyal English subjects and a sympathising people. We are struck by the lists of machinery exhibits, by the recurrence of well-known names, and by the appearance of machines, the uses of which we can hardly divine. We soon see we are far, very far, from home; but our implement makers have been awake, and have adapted themselves to the needs of this far-off spot. Naturally irrigation, on which so much hangs, is responsible for many of the machines, and as there is water pretty handy there is a great deal to be done in the way of working trials. Machinery in motion is always an attraction to the visitor, whether on business or only on pleasure. We think as an attraction it ranks next to the jumping in the horse ring. We do not know whether the light railway running round the show ground was intended for visitors or only for goods; we only know how foot-sore show grounds have made us, and how we should have welcomed a ride round any of the Royal Show enclosures. We give this as a hint to the Hanover Square authorities.

For the exhibits of working machinery of Messrs. Allen and Alderson, Ruston of Lincoln supply the motive power. A little machine which will burn either coal or petroleum must be a useful thing. A machine which converts cotton seed into cake and oil "while you wait" will doubtless attract much attention. It is not mentioned whether the seed is cleaned or not, previous to crushing. It appears that it is only ten years ago since Wheat and Barley threshing machines were introduced into Egypt, and this year sees the Maize-sheller, manufactured by Clayton & Shuttleworth.

Naturally there are ploughs, and the first prize goes to the Khedive's right-hand man, Mr. Wright, for his patent Kowbbeh plough; a medal goes also to Ipswich for a balance plough, and the far-famed Oliver plough only comes off with a bronze decoration, as, though it is good as far as the shape of the mould-board is concerned, it is not quite the best as calculated for Egyptian work. It is a strange sight to see these stately Orientals in their flowing robes moving among such "up-to-date" machinery, and it is only by a miracle we think that they keep clear of revolving wheels. The customer is catered for, as behind each stand of exhibits in a snug tent with gilded arm-chairs and the inevitable cup of coffee. We are used to the tent, the claret and biscuit, or whisky and soda, but not to the gilded chair or coffee.

Now for the live stock, it all seems so utterly different. With us at a show the first thing is the horse, and it is marvellous to note the countless classes and distinctive features. There are light horses and heavy horses—horses for use, horses for pleasure, all for profit; horses young, from the foal to the aged mare, the joyful mother of many a ribbon-bedecked youngster. We remember at one Royal the grand parade of prizewinners, headed by a glorious old Shire and finished off by "Good Friday," the tiny Shetland stallion. Here we notice one class alone, and that for agricultural horses—think of that! but as compensation there is the camel and dromedary class—the camel so dear to the heart of Rudyard Kipling—and the mules and the donkeys, both telling of hot sandy plains. Buffaloes, too, are in the list, with three breeds of native sheep and one for those of foreign extraction. We see there is a school of agriculture, which successfully competes in several of the classes.

It is so funny not to see a class for Shorthorns or any of our favourite breeds of horned stock. They appear to be named from their districts, and we see one class for what we should call the cottager's cow. We find also goats figuring. We have poultry and eggs, but who ever saw here a basket of "twelve goose's eggs?" It is a funny way of putting it. There are pigeons and rabbits, also grain of all sorts, both of home and foreign varieties, and grain we are not accustomed to see. Lentils we know in our soup. Sesame,

which appears to be an oily seed, we associate most with the Arabian Nights. Fenugreek appears to belong to the Clover tribe, we know it enters into the composition of a stimulating food. There is red Wheat and white Wheat, but there is no mention of a Major Hallet; perhaps the native raiser or improver is to be found in one of the numerous pashas or beys.

The cotton classes are strong. We do not know the commercial value of Egyptian cotton, whether it is better or worse than Indian or that from the States. We have sugar and Sugar Canes, Beet and Potatoes, and these latter are under two heads—1, Potatoes; 2, Potatoes for export. What on earth can be the difference? What on earth is Semneh? We leave that as a riddle for our readers. We cannot solve it. Tomatoes and Onions (there should be the Cucumbers, the Melons, and the Leeks, the Garlic along with the Onions) reminds one more of a horticultural show, but the butter, and honey, and wool bring us back to our bearings. We are glad to see the School of Agriculture takes both butter prizes, but where, oh! where, is the cheese? Honey naturally follows, and after it the sweet and toothsome Date. Henna, is not that a dye extracted from a shrub of an orange colour? The last exhibit must appeal to all the ladies, for who does not love the soft gracefulness of an ostrich feather?

Work on the Home Farm.

March has not gone out like a lamb, but more after the manner of the proverbial lion. Most unusual is it to find pumps frozen up at the end of March, but so it was last week on at least three mornings. We had not much snow, and the cold snap was more inconvenient and hindering than really harmful; in fact the stronger soils have gained greatly in condition through the action of the frosty winds, and if the rain will but keep off or come in moderation, spring sowing may yet be completed more favourably than was expected.

We find that the dressing of Barley with smut preventive is largely on the increase. Considering the prevalence of this harmful pest amongst Barley of recent years, it is surprising that farmers have not taken preventive measures sooner, but as a body they are very slow to move. Though it has been too cold for Barley drilling, good work has been accomplished amongst fallows, which have worked very well. Fields, too, which have not been moved since autumn on account of their wet condition, have been dry enough for cross-cutting, and have turned up better than could have been expected.

It has been too cold for cattle outdoors lately, and grass looks very bare again, so notwithstanding the scarcity of straw the animals have perforce been brought up.

Lambing results are as variable as ever as regards loss, but the lamb crop is good with few exceptions. Early lambs have not done very well, and fat Easter lamb is likely to be dear.

Spring sales are going off in a fairly satisfactory manner. Old harness as usual is making much more than it is worth, and implements are selling well considering the large number of sales in the district. The newest articles are almost always the cheapest; a practically new one will make about two-thirds of its cost, whilst one half worn out will make nearly as much, but farmers seem to set themselves a limit when purchasing at sales, regardless of the intrinsic value of the article for which they are bidding.

Before cattle are permanently turned away to graze they should be examined for warbles, which can easily be felt by handling. A small quantity of mercurial ointment applied to each warble will kill it and prevent the pest from spreading.

Winter Diet for Fowls.—"No Corn," says one; "Plenty of Corn," says the next; and both are getting good results in eggs. One very large farm, where egg production is the chief end, uses large quantities of Corn, and the owner speaks right out for Corn as deserving first place as an egg-producing food. Why such a difference of opinion? The general condition of the birds, and the general conditions under which they are kept, may have much to do with this. One grower of poultry and eggs keeps his stock in range order, as a general thing; another keeps his nearly fit for the butcher at all times. The birds already fat might soon go off laying on a diet of Corn, while the lean flock might be pushed to laying condition by the same feed. Then one owner might cry down Corn, while the other extolled it as an egg producer. A point not often considered has been touched on by Dr. Woods in one of his practical letters. He says:—"If you feed a diet rich in protein, and neglect to provide exercise, you simply pay for high-priced feed to produce fat, which can be more cheaply produced by feeding fatty food." This is a point where the general conditions under which the birds are kept may influence results. In straw-littered pens, in which all the grains are cast, to be worked out by continual exercise, a variety of feeds would bring eggs, if dryness and light were a part of the conditions also. In the sunny barn cellar the result would be similar, but if there were no litter, and no sunny wallowing spot, any kind of food would bring the inevitable result of inaction, viz., fat. Proteid foods might bring the same result, or worse, a condition of actual disease, if too freely used under conditions not allowing exercise.

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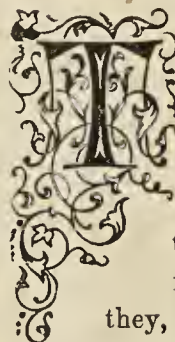
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Journal of Horticulture.

THURSDAY, APRIL 11, 1901.

Man and Plant.



HAT "grinhus"! Was there ever anything so entrancing? With its back bench holding a line of big Fuchsias; with its step-ladder stage sustaining a medley of lesser things; and lesser still—pigmy plants filling a front shelf till such time as they, too, could go up via the step-at-a-time arrangement, and finally roll out into the

world beyond, in, maybe, a carriage and pair, or a pony chaise. A famous Fuchsia grower was "Old Applo," my gardening friend of the long ago, in an old world Kentish village, passing rich upon a modest pension which paid his rent and left a little over. The pseudonym of Applo was traceable, probably, to his clarion note when hawking the fruit of a famous Blenheim Pippin, which had been known to yield 40 bushels in a season; but his genial, rubicund face, wreathed in a time-frosted whisker, seemed so typical of his clear skinned, unspotted Pippins, that by no other name would he have been the same to me. Mine was not the only Pippin face which peered into his basket, for he was beloved of the boys; and those Pippins, in exchange for money if we had it, for love if we hadn't—oh, those Pippins! It is, however, the memory of the greenhouse which strikes an almost lost chord of sympathy, still noticeable even in this severely practical age, 'twixt man and plant. That "grinhus," pervaded by a subtle scent, or rather the commingling of many odours, which many years and many miles o'er land and sea will never efface, for—

You may break, you may shatter the vase as you will, But the scent of the Roses will cling round it still.

What a fricassee of foolishness to set before a journalist! may be said; and when it is added that "Old Applo" talked to his plants, some, of course, will say the man was mad. Some said so then, indeed, but they also said he made "a mint



During **FIFTY-TWO YEARS** the "**JOURNAL OF HORTICULTURE**" has been written by Gardeners for Gardeners, and in its principles, its practice, and its price it still remains the same. One alteration is perhaps, however, necessary. Our modern methods of production have rendered the price old-fashioned, and hence in order to meet the wishes of the present generation of Gardeners the "**JOURNAL OF HORTICULTURE**" will hereafter be sold for **TWOPENCE** instead of Threepence.

o' money" by his greenhouse, and the plant conversation was perfectly intelligible to my sage experience of five summers if the "mint o' money" was somewhat puzzling. However, it seemed nice, but nicer still did it seem to be mad—as mad as "Old Applo." "Now my booty, you be a dry, be you?" To hear him speak thus to a Fuchsia brought, somehow, a thirsty feeling in my mouth, and somehow, too, that plant seemed at once to put on a more pitiful droop, until the waterpot made us both feel very much better. He talked to his plants, and they replied in eloquent silence we so well understood. But, alas! one day there was a strange commotion at "Old Applo's" as I crept in unnoticed and wandered into his greenhouse for the last time. All the plants were drooping then, and I sat on a pot and cried with them until someone came and comforted me with a very small Fuchsia bearing a very big name, a name only used for carriage folks; our common name was "Wenus," and I carried my "Wenus" home, and they carried away dear "Old Applo" down the long, white, dusty road, never to return.

Now and again one meets men whose methods and manners resemble in a measure those of the departed friend. Some of them, when subjects of conversation, are spoken of as "characters," and as they rise in the world of work, as some of them have risen, by the higher paths of science, and walk in closer communion with Nature, they are then termed enthusiasts. As gardeners they have not, probably, produced the biggest Onion or the heaviest bunch of Grapes, and they are to be regarded as ministers rather than masters of Nature. To them she deigns to reveal her little things, which some, perchance, outwardly condemn, but none really can afford to despise. Of what use, may be asked, is such philosophy to a gardener? But were it possible to bring side by side the man whose soul goes out to meet the soul of Nature, whose life of toil is sweetened and ennobled by this communion with his antitype, then, and then only, perhaps, could the question be fully answered; and in that is the secret of all that makes life worth living. Nay, more; for to such men life is a perpetual feast.

Would that one could more clearly set forth this philosophy to show that it is no fleeting vision of a dreamer—show how men by its means are lifted above all the drudgery of commonplace, and that no vicissitudes of life are able to sap the twin essences which feed the lamp of love, brightening the, maybe, lowly, and often lonely, path. No more apt pupil was ever schooled in the kingdom of silent life than "Old Ephraim," who presided over a Gloucestershire garden. His plants were a picture of health, and his Roses rosier, figuratively, than other Roses for a score of miles over the breezy hills. As for Tea Roses filling a rickety greenhouse which leaned lovingly against the quaint old rectory, I have never seen them equalled, and they were a veritable thorn in the flesh of his lordship's head gardener, my then master. It was, of course, very well understood by us that "Old Eph" was "no gardener," for the utter absence of mathematical precision in all his works in that old-world entanglement of fragrance and beauty proclaimed the fact, but that the lives of man and plant were indissolubly bound up to their mutual advantage was incontestable. One never saw green fly on "Old Eph's" Roses, and the only way we knew that such contingencies ever confronted him was from a contemporary boy employed at the rectory, who would tell us, "When I sees 'Old Eph' a scratching hisself in the greenhouse, for sure and sartin the fly's about," and the old man had been known to wait up till the "we sma' hours" for the wind to drop in order to fumigate them and his own feelings to a normal degree of comfort. That prevention is better than cure was a fundamental ethic unconsciously interwoven in the life's web of this grand old gardener; so with all apt pupils of Nature in that most fascinating phase of work—gardening.

So far back as when men planned those grand old temples as models of architecture for all time, the magic influence of plants was to them a link connecting the two great kingdoms of life. One, Empedocles, not only maintained that plants possessed life and sensation, but said he recollected the time when he had been a plant. Respecting such a memory we may, in the language of Dominie Sampson, say it was "prodigious;" but the moral remains that this invisible inter-relationship, if it may be so termed, is an old, old story, and probably goes back to the "The Beginning."

A practical man may possibly say that no such absurd theories or abstruse thoughts ever enter into his calculation. That is a matter for doubt, however, and possibly it is not possible for a successful gardener to pass on through life dealing with these subtle forces of Nature as mere inanimate objects like bricks and mortar. What a comparatively poor thing gardening would be if carried on within the boundary of such meagre mechanical lines! There is much in the common round, the daily task, which brings a man in sympathetic touch with the objects of his care, and in some cases this eventually results in an apparently perfect understanding between man and plant. To him, as a pupil of Nature, is given to understand what must ever remain a mystery to others, and in the understanding his eyes are opened to a world of interest and beauty for which he is the better gardener and the better man.—K., *Dublin*.

Filmy Ferns.

Todeas.

Todea superba and *T. pellucida* are natives of New Zealand, and are the two best varieties of *Todea* which require the treatment accorded to Filmy Ferns. The fronds of *Todea superba* will in a good specimen grow from 18 inches to 2 feet in length. They spring direct from a central crown very closely together, gracefully curving and arching equally all round, hence a plant requires considerable room.

I once had charge of a fair sized *Todea superba*, which was established in a 9-inch pot, and this stood in a deep, wide glass case, with a movable top like a hand-glass. It had, however, to be shaded in bright weather with tiffany, and at all times care was given to see that the necessary moisture was accorded the fronds. This, however, had to be done by gently spraying. Of course the plants succeed well in a thoroughly humid atmosphere where they can receive their moisture in a condensed form. The compost for growing the plants should be highly porous, and may consist of turfy peat, loam, leaf soil, in equal parts, with a free admixture of chopped sphagnum moss, broken sandstone, and silver sand. Similar treatment in every respect suits *T. pellucida*. The fronds of this variety are more branching and loose, but yet are peculiarly beautiful and transparent, growing about 18 inches in length.

Hymenophyllum tunbridgense.

This is one of the Filmy Ferns, and is hardy in situations where it grows freely and luxuriates. The fronds are of a feathery character, delicate in construction, and membranous, growing to the height of 3 or 4 inches only. The compost best suited for the cultivation of this Fern consists of a porous mixture of peat, loam, sweet leaf soil, charcoal, broken pieces of sandstone, and plenty of silver sand. Although in its native habitat this Fern is hardy, growing as it does in very sheltered positions under and among rocks and other well protected interstices on the banks of streams, under ordinary cultivation it is not desirable to grow it without some temporary protection, such as can be afforded by a good deep frame or pit or Fern case. The glass can always be protected in severe weather, and the plant is easily shaded from sun. The latter is a most essential point, as Filmy Ferns can only thrive in the best manner when constantly shielded from direct sunshine, though in common with other plants they like light. Give them plenty of water, and maintain the surroundings and atmosphere damp. This is a suitable time to plant or establish divisions in a Fern case, in a shaded window, or in an appropriate position in a hardy fernery. It may also be established in a pan covered with a bell-glass. Little ventilation is required, a few minutes daily being all that is necessary.

Trichomanes radicans.

This Filmy Fern is popularly known as the Killarney or Bristle Fern, Ireland being the chief place in which it has been found in Europe. It is not quite hardy, but requires very little protection. The fronds are beautifully divided and are almost transparent. It is a splendid Fern for a close glass case, a large bell-glass, or a shady moist spot in a cool fernery. The compost most suitable consists of peat, loam, leaf soil, broken charcoal, and sandstone, mixed well with silver sand. The fronds rise from creeping rhizomes, and in planting, these rhizomes should be pegged down securely in the compost on or near the surface, not burying them. Keep the atmosphere constantly saturated with moisture, which is better for the Ferns than syringing them. They seem to better appreciate the deposition of moisture by this means than by any other. Shade from direct sunshine is most essential, hence when growing under bell-glasses or in Fern cases, these receptacles ought to have a position in a north window or aspect, so as to render the necessity for shading nil.—E. D. S.

**Angræcum fastuosum.**

The genus *Angræcum* was established in 1822 by Aubert du Petit Thouars, to include certain species of epiphytal Orchids found in East and West Tropical Africa, Madagascar, and the adjacent islands, and in a work published by that botanist several of the species now in cultivation were described. It was then believed that the geographical range of the genus was very limited, but species have since been found in Japan and the West Indies. Their headquarters are Western Tropical Africa, from Sierra Leone to the River Gaboon the opposite side of the great continent about Zanzibar, in Madagascar, the Comoro Islands, Bourbon, and Mauritius. They are essentially heat and moisture-loving Orchids, and with the exception of the Japanese *Angræcum falcatum* they need the warmest compartment of the structure devoted to such plants. Being epiphytal in habit the majority require to be grown in baskets or on blocks of wood; but those of vigorous habit, such as *A. eburneum* and *A. sesquipedale*, are usually grown in pots with abundance of potsherds as drainage, good fibrous peat and sphagnum, or the latter alone, that moss also being employed when the small forms are grown in baskets or on blocks. As with all Orchids of similar habit and from similar climates, abundance of water is required during growth, and a less amount when at rest; in other respects they may be treated like most of their allies.

Vanda cærulescens.

This is a delightful plant, and one worthy of all care. The blossoms are not as large as those of *V. cærulea*, but have the same charming tint of blue that is so uncommon and attractive among Orchids. The growth is small, and the plants do best when established in baskets, and suspended near the roof ventilators of a warm moist house. There are many varieties of it, but none are to my mind prettier than a good form of the type. This was one of the plants sent to illustrate Mr. White's paper on Orchids, that are little known and rarely cultivated. That this is true of the species some may be inclined to doubt, but I heard someone expatiating to a friend upon it as a small *Vanda cærulea*, so apparently it is unknown to some who profess to teach others. Mr. White's paper, by the way, was read at the Drill Hall meeting on March 26th.

Trichocentrum tigrinum.

This is one of the pretty dwarf free flowering Orchids that are not nearly as much grown as they deserve. They have a great charm for those who look for beauty as distinct from mere size and gorgeous colouring. The plants are only a few inches high, and the flower spikes appear in early spring at the base of the bronzy leaves, each bearing two or three blossoms. The sepals and petals are greenish yellow, blotched something like *Odontoglossum Cervantesi* with purple brown, the showy lip pure white with a yellow crest and a bright purple area at the base.

T. tigrinum needs very little in the way of compost. If grown in pots or pans these must be very small and filled almost to the

rim with crocks, a little peat and freshly gathered sphagnum moss being placed on the surface. A better plan is to establish the little plants upon small blocks of Tree Fern stems and insert these in pans, filling up with crocks and giving a very slight surfacing of moss. Cork may also be used, but the Fern stems are better. Being a small grower and not particularly strong, too decided a resting season is bad for it, and occasional waterings should be given, even in winter. In summer a good clear light is essential, and an intermediate temperature.

Cypripedium Mastersianum.

As a flower for table decoration this *Cypripedium* would be difficult to surpass, as I do not know a species that so improves under artificial light. The green dorsal sepal has usually a margin of a lighter tint or else pure white; the petals are rather stiff-looking, bright reddish purple, with markings of a deeper hue, the lip pale red. The plants thrive best in a shady position in the hottest house, and should be potted and watered as advised for *Cypripediums* generally. It was introduced from the Malay Archipelago some years ago, and recent importations have made it more plentiful than formerly.

Orchid Potting.

Nothing has done so much towards giving flowerless Orchids the name of unsightly plants as the slovenly and untidy methods practised in potting them. Fortunately it is not so much the custom as formerly, and when young men in charge of Orchid houses take an interest in keeping them smart and tidy their good work shows. But not everyone has had the requisite practice, and without this Orchid potting is rather a difficult task for a time. The chief difficulty at first will be found in so fixing the plants that they cannot rock about, and the compost so that this does not swill out of the pots.

There is a knack of using the blunt dibber, without which it is impossible to obtain good results, and this is best gained—not by pulling about valuable plants, but by practising with empty pots and compost, or even with newly imported plants, that usually have no roots to speak of, and are in consequence not easily injured. Then when a little experience has been gained, established specimens may be taken in hand. To take an instance of an Orchid that is easily potted, I may mention small plants of *Lycaste*

Skinneri. As a rule these are fairly well supplied with roots, that will be of great assistance in fixing the plants.

The pots chosen should allow of a margin of an inch all round the pseudo-bulbs, and filled about two-thirds of their depth with crocks. Over this a layer of rough sphagnum and the larger, rougher roots from the peat should be laid. Take the plant in the left hand, and wrap a little peat and moss around the roots directly under the base of the pseudo-bulbs. Place it in position, with the bulbs slightly above the rim of the pot, and, still holding the peat and moss in position, sprinkle a few bits of crocks in the margin. Then by degrees bed the peat and moss in tightly, and when filled trim off the surface to a neat, cone-shaped mound.

This is the simplest form of Orchid potting, and will vary in different species. Some of the more scrambling growers, such as *Lælia superbiens*, will have to be tied into shape and firmly secured before adding the compost; others, such as the *Bulbophyllums*, and even some of the *Coelogynes*, must have the greater part of the compost laid in before placing the plants in position, simply dibbling in a few bits of peat and moss, and fixing the bulbs and rhizomes with copper wire pegs. Not to occupy too much space, details of many other species must be left out, to be treated of, with the class of compost needed, under their respective names.—H. R. R.



ANGRÆCUM FASTUOSUM.

Thyrsacanthus rutilans.

It is now several years ago since I wrote a short note pointing out this uncommon yet brilliantly coloured stove plant, whose merits receive small attention, and now my opinion is not in the least changed when I come across it in an occasional plant collection. But what a change from the handsome plants we used to see grown some twenty years back, which were then 3 feet high and as much through, and carried great numbers of the long, graceful, pendulous racemes of intense scarlet crimson flowers. These last a long time, and bear removal for grouping in the house, as few would imagine, and that, too, without suffering to any great extent. It is not my intention to submit a long cultural account, but it is not one of the old-fashioned things to be ignored, and I should like to see it more often included.

The present is a useful time to select cuttings, as by so doing there is a good season of growth given, and nice sturdy plants are secured in a month or two. Almost any portion of the shoots may be selected, but preferably the half-ripened ones with good points. A mixture of three parts sandy peat and silver sand will answer, using 3-inch pots, and inserting to the first pair of leaves. A temperature of 65° to 75° and a shady position will insure the rooting, but quicker results are obtained if a propagating case is available. When rooted repot into 4½-inch pots, using two parts fibrous peat, one loam, with a little leaf mould and plenty of sand, potting fairly firm. Growth will then start in real earnest. One of the main points to be observed is that the plants should be kept sufficiently near to the glass so as not to get drawn, yet avoiding intense sunlight, which causes the leaves to become pale. When the roots are discernible through the bottom of the pot, 5½ or 6-inch pots will answer for the next shift, using the same kind of material for potting. Do not let the plants receive a check from want of water at any time, as the racemes are never so long afterwards. During the hottest months of the year an intermediate house suits them to a nicety, and much good is done if weak supplies of liquid manure are given once or twice a week. Towards the end of summer remove again to the stove, and if generous treatment is afforded the grower will be rewarded with quite a handsome return. Scale should be looked for, as the large brown and white is particularly fond of the leaves.—R. P. R.

Vines for Planting and Forcing.

As soon as roots have been formed, and top growth is made to the extent of a leaf or two on eyes inserted early in February, the strongest of the young plants raised in beds may be placed in 5-inch pots, the weaker in 3-inch pots, and from these transferred to 7-inch and 5-inch pots respectively when fairly filled with roots. Eyes inserted in 3-inch pots may be transferred to 5 or 6-inch pots when the small ones are fairly filled with roots; the canes thus potted off, or shifted into larger pots, may be arranged on a bed, or on shelves over hot-water pipes, where they can be trained near the glass, or in all the light possible, syringing them in the morning and at closing time. A gentle bottom heat for a month or six weeks is helpful to the growth of the canes and the formation of roots, but this is not absolutely essential to the satisfactory progress of the Vines.

When the pots are well filled with roots, and the canes have made good progress, the most promising may be shifted into 11 or 12-inch pots for fruiting the following season, treating them in the manner presently to be described for "cut-backs;" but those intended for planting out another year should not be shifted into such large sizes, 6 or 7-inch for the weaker, and 8 or 9-inch pots for the stronger canes being quite large enough, the endeavour being to secure a mass of fibrous roots, short-jointed and well-ripened wood. Such may be obtained by potting in rather light gritty soil without manure, feeding at the surface with phosphatic, potassic, and magnesian manure, such as three parts dissolved bones, dry and crumbling, two parts sulphate of potash, and one part sulphate of magnesia, mixed, using a pinch of the mixture, taken between the thumb and finger, as in that of snuff, per pot, sprinkling on the surface and washing in, applying at intervals of about three weeks. The mixture is best applied with about four times as much well-rotted manure or turfy loam as fertiliser. The laterals should be stopped at the first leaf, and to one joint of subsequent growths, and the Vines grown in all the light possible. It is important that the Vines make and complete their growth in a light structure, due attention being given to ventilation, watering, and providing atmospheric moisture. When thoroughly ripened, and the leaves fall, the Vines should be kept rather dry, yet the soil must be sufficiently moist to preserve the roots sound and the buds plump. I find they winter best on a bed of rather damp, but not very wet, ashes, in a light airy house, from which frost is excluded, or nearly so.

Cut-backs for Growing into Fruiting Canes.

Vines raised from eyes in the preceding spring, and not of a strength for fruiting or planting, or left over from the latter, should be cut back to an eye or two, as near the soil as possible, dressing the cuts carefully with styptic, patent knotting, or, best of all, French polish. In a house with a temperature of 60° to 65° at night, and rise of 10° to 15° in the daytime from sun heat, they will soon start into growth, being introduced at the beginning of February. When they have made 2 inches of growth shake them out of the pots and repot in turfy loam, rather rough, with a sprinkling of finely crushed steamed bones, 6 or 7-inch pots being quite large enough. The pots may be plunged in bottom heat, but this is not essential; suffice if the house is kept at a temperature of 60° to 65° at night, and 70° to 75° by day, advancing 10° to 15° from sun heat, and the Vines are trained in abundance of light.

If two buds are left on a cane at shortening, rub off the weakest shoot at potting or soon afterwards. Place a stake to each Vine and secure the cane to it. Immediately the fresh soil is well occupied with roots shift into 9-inch pots, and from this size transfer to 11 or 12-inch pots. These sizes are quite large enough for the Vines to fruit in, especially for early forcing, but some growers afford 13 and 15-inch pots to Vines that are fruited in recently planted vineries, the varieties being midseason and late, or even Muscat of Alexandria. This shift should be given early in June, always before the last week in that month. The drainage must be thorough, not less than an inch in depth of good-sized crocks and another inch of smaller, all clean, secured with a layer of the rougher parts of the compost. This may consist of three parts fibrous loam and one part in equal proportions of old mortar rubbish and sweetened horse droppings, using the loam rather rough, and adding to the compost a pint of steamed bone-meal, a pint of soot, and a quart of wood ashes, per bushel, mixing thoroughly, and using moderately moist at the same temperature as the house in which the Vines are growing. The potting should be compact, and very hard.—GROWER.

(To be continued.)

Notes on Grafting.

SPRING goes on apace, and on all sides we find Nature bestirring its long dormant members into activity again. The silvery catkin of the Willow, the golden fragrant bud of the Balsam Poplar and the scarlet raceme of the Ribes, peering out of its winter casing, tell us in language too plain to be misunderstood, that time and opportunity wait no man. This being so, it behoves the intending operator in the art of grafting to see to it that he has the necessary appliances at hand convenient for using when weather and growth permit. The first important part of the preparation will be to have sufficient shoots of last season's wood, of the various varieties of trees which he wishes to perpetuate, cut off and buried to the depth of a few inches on the north side of a wall or hedge.

In this position the buds of the scions are retarded and keep safely until the stocks are in an active condition and the weather suitable for grafting. This laying in of scions, if not already seen to, should receive attention at once, for the Cherry even in this northern locality is rapidly swelling its buds. I might here mention that instructions as laid down in many of the older and even modern gardening works anent the proper time for the taking off of scions are, according to some of the best authorities, somewhat erratic.

One of the last-mentioned, writing in the "Fruit Grower's Year Book" some years ago, said that in order to test the method as laid down in the above-mentioned works he gave instructions to his foreman, that instead of cutting his scions at the usual time of about three weeks before grafting, he was to do so much earlier, in fact, if my memory serves me rightly, at least two months beforehand, and take special note of the result.

The percentage of failures resulting from the experiment was found to be much in excess of the normal, and never again will these two gentlemen credit this much circulated theory. The next item required will be tying material, which is easily procurable, raffia or the longitudinal threads of an Archangel mat cut into convenient lengths. These are easily manipulated, and where speed is desired no more suitable material can be got.

Clay as a protective agency has had its day, and although I freely concede that it had many good qualities, yet there is nothing to justify its retention compared to the modern compound and its facility of application. Of grafting wax preparations there are many, and receipts are often given for the same in which the variety of ingredients seem to be quite superfluous, for as far as my experience takes me, a simple is quite as good for all practical purposes as a complex mixture. The following is easily made and thoroughly satisfactory: Two parts of rosin, one of lard, one of pitch, with as much fine brickdust as will give it consistence. All that we now require is a keen edged, medium-sized knife, with a straight rather than a curved blade.

Having enumerated all the material necessary, and supposing that they are at hand, we have now only to wait until the stocks are commencing to move, and the weather settled. Choosing a calm, moist mild day for our operations, our first care will be to see that the wax is kept in a liquid state, but on no account may it be applied at a high temperature.

In proceeding to operate, first cut over the stock in a slightly slanting direction at about 5 inches from the ground, then have your shoots cut in lengths of about 6 inches, discarding everything that appears to be soft or not properly ripened. Now take the scion and cut in a slanting direction, commencing at about 2 inches from the base, and finishing thinly, leaving a tongue at about half an inch from the beginning of the cut, then measure by the scion the length of slice required to be taken off the stock, making a notch at the top in which to fit the tongue of the scion so as to retain it in position until tied.

Philesia buxifolia.

THIS charming shrub is far too seldom seen in gardens, and even where it is included in collections it is commonly in such indifferent condition that its real beauty cannot be imagined by those who have never seen it well grown. When, however, it is thoroughly healthy and bearing a profusion of its rosy Lapageria-like flowers, it is certainly one of the most beautiful shrubs that can be grown in a cool house.

I had a plant in the greenhouse twenty years, and it made no progress—neither bloomed nor thrived, so I told one of my men to throw it into the wood; he did so, without the pot, under some large trees where the sun never shone. It remained there all the winter, and I happened to pass the same place in May, and to my surprise it was in full bloom, the most lovely plant I had seen for a long time, flowering



PHILESIA BUXIFOLIA.

The scion having been fitted accurately, it is important to watch in tying that the two cambium layers coincide, and that the scion adheres to the stock the whole length of the cut. All that is now required is to seal carefully round about the matting, leaving no chink into which the air can get, and finish off by touching the top of the scion. In grafting old trees which have been cut down, strong scions should be selected, and rind-grafting substituted for the common whip graft. Cut the scion in the same manner as detailed above, and with a budding knife or ivory raise the bark and insert the scion, tying and sealing over as before.

The previous season's wood is employed for all fruit and ornamental trees with a few exceptions, notably the Weeping Willow, when two years' wood gives better results. To insure success the following rules should be observed:—1, Fit your grafts accurately; 2, let as little time as possible elapse between cutting, tying, and waxing; 3, choose a suitable day, and on no account attempt the operation during frost or rain.—W. L., Edinburgh.

amongst weeds and leaves. I carefully took it back into the house, but it refused to grow, and looked as if it were most uncomfortable. I then potted it in bog soil, not peat, and placed it into a pit in one corner, where it has not been exposed to the sun's rays for ten years. The pit has a north aspect and no artificial heat, and there it stands and blooms every May, lasting six weeks in beauty. I think it is a bog plant, for the pot is always covered with green slime, and it will take any quantity of water; it produces large stems each season, like the Lapageria.

Philesia buxifolia is a native of South America. It is found growing in large masses upon the trunks of trees, amongst rocks, and in boggy positions, where it assumes such a beautiful appearance that Sir Joseph Hooker has characterised it as one of the most handsome shrubs of the antarctic American flora.

It is closely allied to Lapageria rosea. The flowers of the Philesia closely resemble the Lapageria, being of wax-like substance, bright rose in colour, and drooping. The leaves are narrow and dark green, somewhat suggestive of Box, from which the specific name is derived.—C

NOTES & NOTICES

Weather in London.—Thursday morning, the 4th inst., opened bright and bracing after the previous evening's heavy rain. Good Friday, and each succeeding day up to Tuesday, was bright and most enjoyable. Wednesday was mild but dull, with occasional showers.

Weather in the North.—On several mornings of the past week there has been sharp frost, and on the 4th a heavy shower of snow fell. But the chief feature has been much wet. The 2nd was a day of excessive rain, and, except on Sunday, which was fine in the earlier part, more or less rain has fallen daily.—B. D., *S. Perthshire*.

The Gardeners' Royal Benevolent Institution.—Her Majesty Queen Alexandra has been graciously pleased to continue to be a patron of the Gardeners' Royal Benevolent Institution, of which her late Majesty Queen Victoria was patroness for fifty years.

Royal Horticultural Society.—Notice is hereby given that a general meeting of the Fellows of the society will be held at the Drill Hall of the London Scottish Volunteers, Buckingham Gate, Westminster, on Tuesday, April 23rd, to consider and, if approved, to adopt the proposal of the Council to purchase on behalf of the society for the purpose of its new gardens, 48 acres of land in the county of Kent, forming part of Rabbits' Farm, and adjoining the Little Boys' Home at South Darenth. Fellows wishing to see the property before the meeting should take the 10 A.M. train from Victoria (L.C. and D. Railway), to Farningham Road Station, on Thursday, 18th, when some members of Council will be on the spot to explain the boundaries, &c.—By order of the Council, W. WILKS, *Secretary*.

The Daffodil Cup.—We are asked to announce that this cup, offered at the R.H.S. meeting on Tuesday, the 9th inst., not having been awarded, owing to there being one competitor only, will be offered in competition again on April 23rd, as follows:—Group of Daffodil blooms (*Polyanthus* varieties excluded) grown without artificial heat; must include some of each section, Magni-, Medi-, and Parvi-Coronati; must contain at least fifty varieties distinct, of thirty of which at least three blooms each must be shown. Not more than nine blooms of any one variety may be put up. To be staged in bottles, vases, or tubes, not exceeding 3 inches in diameter at the top (inside measurement), and all the stems must touch the water. Quality of flower will count more than quantity, and correct naming and tasteful arrangement will be duly considered. Any foliage may be used, Daffodil or otherwise. No prize will be awarded unless there are two competitors at least. Open to amateurs and gentlemen's gardeners only. First prize, a £7 7s. silver cup, presented to the society by Messrs. Barr & Sons; second prize, silver Flora medal. Owing to the backward season the Narcissus Committee will also meet on May 7th.

Hippeastrums and Other Flowers at Kew.—One of the greatest attractions within Kew Gardens during any season of the year, but never greater than in springtime, is the flower house (No. 4) under the charge of Mr. Garrett. Hippeastrums are at their best at the present time, and amongst the numerous plants filling the stages there are some exceedingly promising seedlings. The flower scapes are not so large or handsome as we have seen them at Kew in years past, yet the colour of most of the blooms is intense and attractive. One seedling is carrying six full-sized and deeply coloured crimson-self flowers; others have five, and many have three and four. Amongst other attractive plants in the same house are standard and bush-trained *Wistaria sinensis* and *W. s. alba*, *Callas*, *Azaleas*, *Primulas*, *Eupatoriums*, *Boronias*, *Cyclamens*, *Cinerarias*, *Narcissi*, and all the other popular spring-flowering bulbous and forced shrubby plants, including *Spiræa Van Houttei*, *Prunuses* and *Pyruses*, tree *Pæonies*, *Ilex virginica*, *Cytisus*, *Lilacs*, *Japanese Maples*, and *Acacias* combine toward the furnishing of a very attractive house. The *Clianthus puniceus*, with deep crimson "leguminous" flowers is a special feature as a climber, whilst the fine new *Primula kewensis*, and the superior Aldborough variety of *Anemone fulgens*, are other subjects of unusual interest to the lover and judge of plants. On Easter Monday 68,000 people visited Kew Gardens, and almost as many on Good Friday, Saturday, and Easter Sunday respectively.

Great Britain ships firewood from Australia for her troops in China. * * * It is a popular impression that Alaska is a frozen zone, and that the soil is barren and worthless. This is a mistake. The sun is hot during summer, the snow moistens and enriches the earth, and the soil in the valleys is fertile and productive. Wheat, Corn, Oats, Barley, Buckwheat, Flaxseed, and a considerable variety of vegetables and forage plants can be successfully grown in many parts of the territory.

Irish Tobacco Culture.—The growth of Tobacco in Ireland, we are told, is being fostered under exceptionally favourable conditions, the Irish Agricultural Board making praiseworthy efforts to give the experiments a fair trial. It has been shown that very good Tobacco can be grown in Ireland. "The climatic effects on the quality will be one of the duties of the Board during the present year," says a Liverpool paper. We confess we did not know that Mr. Horace Plunkett's department had any "climatic" powers.

Poison Plants.—At a recent meeting of the Linnean Society a report on the poisoning of several parrots from eating Parsley was presented by J. E. Harting, who took occasion to review other instances of plants poisonous to domestic animals and not to man, and *vice versa*. Larks, starlings, and finches eat the berries of the Mountain Ash (*Pyrus Aucuparia*), but they are poisonous to man; goats eat Oak twigs without any bad results, while deer and cows are fatally poisoned. Goats appear to be very resistant against poisonous plants; in a case of poisoning from goat milk investigation showed that the animal from which the milk had been taken had been feeding on leaves of *Colchicum*.

"He Was a Brick."—When a certain young man, a member of several social and fraternal organisations, died, each society determined to outdo the other in the matter of flowers, and great was the display at the funeral. A New York newspaper states that one committee selected a pillow of Belle Siebrecht Roses on a bed of Immortelles, and wanted some highly original and striking lettering thereon. The florist showed his book, but nothing that it contained was suitable. The committee retired, and after a long consultation ordered the words, "He Was a Brick!" Protest was in vain. The pillow must have those words or a rival florist would be patronised! So the young man went to his last resting place with the inscription, "He Was a Brick," standing out from the pillow in purple letters.

New Vegetables.—Were it not that humanity are creatures of conventional habits, the probabilities are that our sources of food supply would be very extensive, and we should not be so dependent on certain known and cultivated species as we are. Arguing on this line of thought "*La Science Française*" puts forward the following suggestion:—"Our present garden vegetables are cultivated varieties of wild species; why do not our horticulturists seek for other wild plants that could be introduced with profit to our tables? A fortune awaits him who does this successfully. We may be shy, at first, of a dish of Iris or a Saxifrage salad, but the papers will relate how Bernhardt or Coquelin ate and liked them, and then the Iris and the Saxifrage will become popular, like the Potato." The possibilities of the vegetable kingdom as a source of food supply are immense, and the suggestion thrown out above is well worth pondering over.

Experimental Gardening in Worcestershire.—The annual report has been issued in connection with the experimental garden started at Droitwich five years ago. It contains detailed information respecting the crops of fruit and vegetables grown on the land under various systems of culture, and the tabulated results will be found very instructive. The garden is 2 acres in area, and was previously part of an old pasture, but owing to liberal applications of manure the crops have greatly improved, and especially Onions, Celery, and Leeks. Other crops have improved, not only because of the richer soil, but because it has been made sweeter by deep culture and aëration. The garden is said to increase yearly in interest and instructiveness. Vegetables are cultivated under two different sets of manurial conditions as represented by plots devoted to stable manure, mixed chemical manures, garden refuse, stable manure, and mixed chemical manure, no manure, sulphate of ammonia, nitrate of soda, kainit, and superphosphate of lime respectively. The experimental garden now contains seventy-six varieties of Apples, forty-seven of Plums, thirty-five of Pears, twelve of Gooseberries, eleven of Currants, ten of Raspberries, and thirteen of Strawberries.

Bicentenary of the Sweet Pea.—The committee have decided to publish in the form of a report the whole of the proceedings of the recent bicentenary celebration, which will take the form of a book of octavo size of from eighty to one hundred pages, bound in cloth boards, to sell at the price of one shilling.

National Sweet Pea Society.—A meeting of the General Committee of the National Sweet Pea Society was held on Tuesday afternoon at the Hotel Windsor to receive the recommendations of the Executive Committee in relation to the schedule of prizes, and the rules of the society, and to transact other business. The schedule and rules were passed, and will be immediately placed in the hands of the printers for distribution at the earliest possible moment. The date of the show was fixed for Thursday and Friday, July 25th and 26th, at the Royal Aquarium, Westminster. Mr. Horace J. Wright was appointed general secretary, and Mr. Richard Dean, V.M.H., exhibition secretary. A substantial amount of financial support was promised at the meeting.

Bees and Fruit.—Bees might puncture ripe fruit if they felt so inclined, but they never do it. It is only when the fruit is dead ripe and cracks open, or has been punctured by birds, wasps, or in other ways, that the bees work on it. Experiments lately on foot prove conclusively that bees never molest sound fruit, no matter how ripe or thin skinned it may be.

Royal Gardeners' Orphan Fund.—The thirteenth annual report and list of subscribers for 1901, together with the rules and regulations of the above-named gardening charity, has been issued. We are reminded by a notice on the outer front page that the Fund was established in 1887, in commemoration of the Jubilee of her late Majesty Queen Victoria. That success has rewarded the efforts of the promoters and supporters of this valuable Fund has been amply demonstrated at each succeeding annual general meeting, and the publication containing the report seems still further to impress one in regard to the amount of business and work transacted through the Fund. Exclusive of advertisements, the report extends to forty-five pages. Subscription forms and forms of bequest are fittingly provided for the use of anyone into whose hands these reports may fall, and who is disposed to aid the subscription list. The report and balance-sheet, of course, were printed in the *Journal of Horticulture* at the time of the annual general meeting in February. The objects of the Fund are fully and clearly detailed along with the report, so that those who recognise a duty in the upkeep of so deserving an institution would do well to write to Mr. B. Wynne, 8, Dane's Inn, Strand, London, W.C., for a copy of the publication here referred to.

A Book on Tomato Culture.—Mr. W. Iggulden has just issued the fifth edition of his popular and useful shilling book on "The Tomato." Up-to-date cultural directions for maintaining a continuous supply of fruit, including special instructions for amateurs, growers of fruits for market, and exhibitors, together with a chapter on diseases and insect pests and their prevention, are features which give the book its high value in the hands of practitioners. The good-wife of the household is not forgotten either, for the publication ends with a chapter giving a list of good and useful recipes, most of which we hope may prove appreciable when put into practice. We are gratified to find that considerable attention has been bestowed on Tomatoes in the open air. After referring to the British growers' drawbacks as regards climate in the attempt to produce crops from the open ground, Mr. Iggulden goes on to discuss practical details. He says:—"The great point to be borne in mind is that our summers are often very short, and unless a good early start is made much of the fruit may form too late to ripen properly. The cultivator should aim to produce a good lower cluster of fruit as early in the season as possible, this usually ripening, whereas the later set clusters may become diseased and worthless. Where only a few plants are put out extra pains may be taken with these, some growers turning strong plants out of 6-inch pots already furnished with some fruit. Not only has this entailed extra labour, but unless particularly well attended to for a fortnight or so after planting, these large plants do not take readily to their surroundings, and a severe check to growth is the consequence. This plan is certainly much better than keeping early-raised plants standing about in small pots and a semi-starved state, from which they never properly recover, the plants producing late and also light crops." The book is one to be recommended to all classes of growers, and the fact of this being the fifth edition justifies our opinion of it. Copies can be obtained at the office of this journal.

Water Freezing.—Water expands by freezing, because it is converted into solid crystals, which do not fit so closely as particles of water do. Hence when ice is reduced again to water it will occupy less space than it occupied before. * * * It is computed that an Oak tree of average size, with 700,000 leaves, lifts from the earth into the air about 123 tons of water during the five months it is in leaf.

Gardening at School.—The latest study for children in New York public schools is gardening—window gardening. The schools are to have hotbeds and conservatories, as well as maps and blackboards. The Society of Intensive Gardening in Philadelphia, which teaches young people how to plant and cultivate, is "campaigning" in New York. "Anyone can make a plant grow in the darkest flat if they know how," an American journalist remarks profoundly, and with the sage's contempt for grammar.

Peanuts in London.—A great variety of most peculiar "wares" find themselves for sale on the barrows of the London gutter-costers. Peanuts are at present selling lively. The plant which provides the "peas" is a straggling, more or less trailing annual, with leaves characteristic of the Legumes, and the butterfly shaped blossoms, whose ovaries develop into a seed pod. As the flower withers the stock or spike of the ovary rapidly lengthens and pushes into the ground, so that the pod is matured beneath the surface. Peanuts are widely grown throughout the Southern States of America, and are used extensively in that section as a food for hogs.

Lecture at Wrotham Heath.—To the regret of all the students, the last of the course of lectures on cottage gardening was given on Tuesday evening in the Mission Room. The lecturer took for his subject "The Culture of Tomatoes," and ably showed the proper mode of culture to be followed to insure a successful crop. At the close of the lecture, on behalf of the members of the class, Mr. Dover said that all felt they were much indebted to Mr. Hollingworth. The latter, in acknowledgment, said the attention throughout that had been given to the lectures had been practically shown in more than double the number of entries for the coming competition compared with last year.

The Weather at Belvoir Castle Gardens, March, 1901.—The wind was in a northerly direction sixteen days. The total rainfall was 1.95 inch, this fell on twenty-one days, and is 0.39 inch above the average for the month. The greatest daily fall was 0.53 inch (part snow) on the 19th. Barometer (corrected and reduced): highest reading, 30.520 inches on the 23rd at 9 A.M.; lowest, 22.006 inches on the 2nd at 9 P.M. Thermometers: highest in the shade, 53° on the 5th and 12th; lowest, 21° on the 26th. Mean of daily maxima, 44.09°; mean of daily minima, 31.35°. Mean temperature of the month, 37.72°; lowest on the grass, 17° on the 26th; highest in the sun, 104° on the 5th and 9th. Mean temperature of the earth at 3 feet, 40.19°. Total sunshine, 91 hours 40 minutes, which is 10 hours 28 minutes below the average. There were four sunless days.—W. H. DIVERS.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901.		deg.	deg.	deg.	deg.	Ins.	deg.	deg.	deg.	deg.
March and April.										
Sunday .. 31	S.S.W.	43.9	43.2	50.9	42.1	—	40.8	41.2	43.5	37.3
Monday.. 1	W.	44.1	39.9	50.4	35.2	—	41.9	42.1	43.5	24.8
Tuesday 2	S.S.W.	45.2	41.8	54.0	27.9	0.02	41.2	42.5	43.5	20.1
Wed'sday 3	S.S.W.	51.9	50.0	56.7	45.7	0.58	43.9	42.8	43.7	40.8
Thursday 4	W.N.W.	44.8	40.9	58.2	41.7	—	45.6	43.7	43.9	40.0
Friday .. 5	S.E.	40.1	38.4	46.6	33.2	0.02	44.5	44.4	44.0	27.2
Saturday 6	S.E.	44.2	41.5	55.3	29.7	0.13	42.4	44.2	44.2	21.5
MEANS ..		44.6	42.2	53.2	36.5	Total 0.75	42.9	43.0	43.8	30.2

The weather for the past week has been mostly dull with very cold winds. There were sharp frosts on four mornings, and heavy rain on the 3rd inst.

Notes from Longford Castle.

To a gardener, though there is an absence of the summer's crops, there is sure to be found plenty of interesting points when privileged with a first inspection of a garden, even in the month of March. True, a period of the year such as this finds the slumbers of the winter passing away, and everything bursting forth into renewed life, giving hopes of useful and pleasant anticipations in the near future; but to the visitor the realisations of distant seasons can only be surmised. Longford Castle gardens have for years enjoyed a wide reputation for their excellent upkeep; though they are at the present moment suffering from a slight depression consequent on the decease of the late noble owner, and the serious maladies contracted on the African veldt by the present Earl of Radnor, which necessitates a sojourn in a warmer health-giving climate.

During the short period of Mr. Hazelton's charge of the extensive gardens some very great and useful alterations have been carried out in the removal of out-of-date, and the erection of modern structures, and the entire remodelling of the heating system. Seven boilers formerly did what two large ones of the Trentham type do now, with much greater effect and ease; economy of fuel and reduction of labour are items the practical gardener is ever ready to endorse when an opportunity offers. This Mr. Hazelton has carried out with marked success. To give a complete history of what has been done and is still in prospect would demand too much space. Suffice it to say, that though results have not lately been judged by competitive successes, first-class material both of fruit and flower is by no means sacrificed in consequence of this necessary abstention.

Fruit, as is well known, has long since been a strong feature of the Longford gardens, and still is; all kinds, both of forced and hardy, being in evidence. At the present time Strawberries naturally hold first place, and judging from the large quantities in fruit and flower, and the successive store to draw upon, these are grown very largely, and uncommonly well too. Royal Sovereign is, as in most places, the favourite kind, though President and Vicomtesse retain a place. Shelves in the fruit houses accommodate hundreds, and others occupy positions in heated pits. Excellent ranges of lofty vineries indicate the large demand there is for Grapes. Some of these are new, and built in the now popular teak wood; some are lean-to, others span-roofed, but all are roomy structures. New borders have been made, and young Vines planted in quantity, and there is every indication of success. The Vines vary in variety as well as in the differing stages of growth, from the swelling fruit to the latest, which are only slightly active. Peaches, also, are largely grown, and, like the Vines, will be subject to renovation as opportunity occur, some of the old-established trees not being satisfactory in root, border, or fruit. Quantities are grown on the garden walls, where they do well, and afford a long succession, to the relief of the glass department. Melons were very forward. Tomatoes, Cucumbers, and Pines also claim attention. The fruit gardens are much subdivided with walls, so as to facilitate the growth of choice fruits, all of which are admirably grown. Figs have a commodious structure devoted to them now, an old one being demolished which had served the purpose for many years.

Plants of all descriptions—stove, greenhouse, soft and hardwooded, and Orchids—are grown in endless variety and quantity. Giant towering Palms and plants, ranging in sizes downwards to those in tiny thimbles, all find a use from some decorative standpoint in the Castle. In the lofty Palm stove the fickle *Schubertia grandiflora* simply revels in the moisture-laden atmosphere, trained to the roof wires. *Thunbergia fragrans* presented a wealth of odorous blossom, and is a striking trailer for the stove roof, being almost continuously in flower. Gardenias rooted from cuttings annually were magnificent; such a freedom of growth, healthy colour, and fine blooms make up an enviable display. These are plunged to the rims of the pots in tree leaves in a heated pit. They were the late Lord Radnor's favourite coat flower, and as such were given a prominence which is still maintained.

A range of Orchid houses in three divisions are filled with a good collection of useful and showy kinds. Some fine pieces of *Dendrobium Phalaenopsis Schröderiana* were accommodated in another span-roofed stove house, suspended from the roof. The interior of the conservatory had been re-arranged and much improved, roof climbers growing with a luxuriance that bespeak good culture. *Passiflora edulis* occupy a portion, and fruit very freely in the summer. Camellias in one greenhouse have been associated with the gardens for many years, and are retained because of this more than for their own intrinsic value. Every available inch of space is fully occupied with decorative material, and in endless variety. Fuchsias play an important part in furnishing the principal rafters in summer. *Acacias Riceana*, *armata*, and *dealbata* give a pretty display in their season; these, like the Fuchsias, growing beneath the rafters, and so restricted that they do not interfere with the other occupants.

As in most gardens the demands of the flower garden tax the capacity of the fruit houses and pits to their utmost, extensive though they are, in providing the many thousands of plants for the summer months. As with the gardens, so in the grounds, alterations have been already carried out which will improve the landscape, and further work

is in prospect at a snitable time. In the shady woodland walks bulbous and spring flowers are springing up in abundance, Snowdrops appearing in wonderful profusion. The natural soil is so shallow that the choicer kinds of specimen shrubs do not thrive without special preparation being made. Box and Yew are exceptions, and do well, and one of the finest trees yet seen of the deciduous Cypress, *Taxodium distichum*, is here. Some very old specimens of the Judas Tree, *Cercis Siliquastrum*, were noted, and a fine spreading bush of *Chimonanthus fragrans* was growing on the lawn. A short avenue of Laburnums, which backed up herbaceous borders, must give a pretty effect in early summer, and on the Castle walls some Apricot trees were trained, and looked healthy and full of flower; the position, however, seemed strikingly unusual.

Longford gardens are full of interesting studies to the visitor, and in Mr. Hazelton they have an exponent worthy of their tradition. Their management, and the continuous improvements carried into effect, reflect the highest credit on their chief, and my regret was that so little time remained available for investigating further interesting points.—VISITOR.

Hidalgoa Wercklei.

AMONG recent greenhouse introductions which seem likely to attain wide approval is this Dahlia-like native of Costa Rica. It was introduced by a New York firm in 1899 under the name of *Childsia Wercklei*. It is a plant of considerable interest and beauty if given a position in a temperate or warm greenhouse, where it may extend over rafters or wire framework of any kind. It is a natural climber and self-supporting, the petioles of the leaves twisting around any slender branch or the like that may come in the way. The first flowers that I had the pleasure of seeing, came from the Royal Gardens, Kew, and were exhibited at a flower show held in the Old Deer Park, Richmond, last year. The bipinnate leaves are freely produced, varying in size, and of a fresh green colour. The ray florets are intense scarlet, with an orange-scarlet reverse, while the disc is bright yellow. [The illustration shows the character of the flower, and was prepared from a drawing furnished by Mr. Wm. Logan, Lewisham, from a flower obtained at the Ryecroft Nursery.—ED.] It has been catalogued as a climbing Dahlia, and like its congeners it is readily propagated from young stem cuttings if placed in a little bottom heat, and when potted on will soon make large plants. The compost should be two parts loam, one part each of leaf mould and decayed manure, with a sprinkling of coarse sand, well mixed.—W. L.

Star Primulas.

Primula stellata.

JUST now this strain of Primulas appears to be in the ascendant, which is only natural, seeing how floriferous they are, and what handsome pyramids of bloom they form. Being at Shrewsbury a few days ago I called at Wem to see Mr. Henry Eckford, and was much struck with the beauty of a strain of the above-mentioned type of Primula seen in one of the plant houses. Mr. Eckford's cunning as a cross-fertiliser has by no means deserted him, for here could be seen an extremely interesting outcome of his skill in this direction. With very few exceptions all the varieties have the smooth-edged segments to the corollas, but they are large and of excellent shape. There were something like 200 plants filling one side of a large span-roofed house, and most striking among them were the shades of rose, from blush rose to quite a deep and glowing tint. Some of the white varieties were particularly fine, and I strongly advised Mr. Eckford to attempt their propagation much in the same manner as the market growers obtain increase of the old Double White.

Among these Star Primulas were shades of red approaching scarlet, more vivid in tints than I had previously seen in any other strain; while shades of magenta could be seen deepening to violet, and leading Mr. Eckford to hope he may eventually find the deepening of this shade lead on to blue, and a better blue than has yet been obtained in the old type of Chinese Primrose.

There was a good proportion of semi-doubles also, which are fertile, and a double white that very nearly approaches the old Double White, which has been in cultivation so many years. The old type is also to be seen in some startling new shades of colour, especially in the direction of brilliant reds, but in habit of growth they appear quite dumpty compared with the plants of the Star section. It is gratifying to find the veteran hale and hearty, enjoying his favourite flowers with the same zest he did fifty years ago.—R. DEAN.

The Manuring of Fruit Trees.

II.—Phosphates.

In the manuring of fruit trees phosphorus holds a place of importance second to none. In dealing with nitrogenous manuring we saw that nitrogen was supplied in abundance in animal manure, and that the soil also received it through the growing of leguminous plants. Besides these two ways, there is a third source from which the soil is enriched to a small extent with nitrogen, and that is the rain, which brings down 4 to 5 lbs. of nitrogen, equivalent to $\frac{1}{4}$ cwt. of nitrate of soda per acre per annum. On the contrary, the soil derives no phosphates from either of the two latter sources, and not very much from the first; for, as we saw, well-rotted farmyard manure only contains about 5 lbs. of phosphates per ton. Hence the justification for the statement at the beginning of this article. Besides the lack of phosphates from which so many fruit trees usually suffer under the ordinary system of manuring (that is, with farmyard and stable manures, not with poultry and pigeon manures, which contain about 20 and 40 lbs. of phosphates per ton respectively), a moment's reflection will serve to show what an enormous amount of phosphates most fruit crops, especially stone fruit crops, abstract from the soil. In bearing a heavy crop, a tree often uses all the available phosphate within reach, and then has to take a year's rest while its roots are opening up fresh feeding ground, and more of the phosphate within reach is becoming available. With proper manuring and judicious thinning, it is doubtful whether any fruit tree need miss a season's blossom. Of course frost, caterpillars, and blight are matters we are not concerned with here.

Having looked at the necessity of the phosphatic manuring of fruit trees, we must turn our attention to the different methods of applying this indispensable food, and firstly as to the various forms in which it can be obtained. A phosphate, of course, is a salt, and therefore formed by the chemical union of an acid and a base. Phosphoric acid is, unlike most acids, a solid substance, extremely sour or acid, and it combines with other substances, such as potash, lime, ammonia, alumina (the metal of clay), iron, &c., called bases, to form salts of these substances—phosphate of potash, phosphate of lime, &c. Phosphoric acid unites with lime in four different proportions, either one, two, three, or four parts of the latter to one of the former. One lime, or monocalcic phosphate, is called superphosphate of lime. This is acid, and quite soluble in pure water. The phosphates in dissolved bones and dissolved guanos are also of this character. When these manures are applied to a soil in which there is a sufficiency of lime, the phosphate speedily takes up another part of lime, so that there are two parts of lime to one of phosphoric acid, and then it is known as two-lime, dicalcic, or reverted phosphate. This is very soluble in the soil water, but more slowly so in pure water. Phosphate of potash and phosphate of ammonia are also of this second phosphate nature, only that the bases, instead of lime, are potash and ammonia respectively. The third kind of phosphate, tricalcic, or three-lime phosphate, in which there are three parts of lime to one of phosphate, is the natural phosphate of coprolites (before being treated with sulphuric acid to make superphosphate), bones, bonemeal, and the insoluble phosphates in some guanos. These are quite insoluble in pure water, and only slowly dissolved by the acids of the soil water, the rain, and the root sap. The fourth kind of phosphate, in which there are four parts of lime to one of phosphoric acid, is basic slag, or basic phosphate, sometimes called Thomas' phosphate

powder. This is even more slowly soluble than the last mentioned. It should be explained that while some of the phosphates of natural guanos, as distinct from dissolved guanos, are as insoluble as three and four-lime phosphate, in the best guanos; on the other hand, such as the real old Peruvian, now very scarce, and that recently introduced into this country from Damaraland, the phosphates are to a large extent soluble in pure water, and almost entirely so in the soil water.

A knowledge of the above elementary facts is absolutely necessary to the intelligent and economical application of phosphate to the soil. The difference in the effects of nitrogen and phosphate on trees is very marked. Whereas nitrogen produces luxuriant growth, phosphate induces fruitfulness and—as the fruit on trees well fed with phosphate grows in a more solid and properly nourished manner—earlier ripening. The application of a soluble phosphate, like superphosphate, is very quick in its action, the phosphate becoming diffused through the soil in a more thorough manner than is the case with any other form of the same manure. The phosphate is dissolved by the rain, and as it

is washed down into the soil the acid phosphate unites with the chalk in the soil, which effervesces, and having lost its carbonic acid (chalk = lime + carbonic acid) the lime unites with the phosphate, forming two-lime or reverted phosphate. If there is not a sufficiency of chalk in the soil this soluble phosphate is not so suitable, as the acid is injurious to the roots of many plants. In that case, the form of phosphate to use is basic slag. As stated above, this is only very slowly soluble in the weak acids of the soil, the rain water, and the root sap; and even to be so far soluble it is necessary that it should be as finely ground that 90 per cent. of it can pass through a sieve with 10,000 holes to the square inch. Much worthless stuff is sold under this name. Dr. Voelcker, the analyst to the Royal Agricultural Society, stated some time ago that out of twenty-two samples submitted to him for analysis, fifteen were below the guaranteed standard, either in grinding or analysis, or in both.

Where soils are deficient in lime and rich in humus, as much garden soil is, this is the very best thing to apply, as the carbonic acid given off by the breaking down or decomposition of the humus dissolves the phosphate, which thus supplies both phosphate and lime. But whereas superphosphate can be applied in the spring, and produces immediate results, basic slag must be applied in the autumn or early winter, or its effects will not be seen till after another season. Where the soil is not very chalky and not very rich in humus, just medium soils in fact, fruit trees derive great benefit from an application of basic

slag in the autumn at the rate of 10 or 12 lbs. per 40 square yards (10 or 12 cwt. per acre), followed by a dressing of "super" in the spring at the rate of 4 or 5 lbs. to the same area. There is no doubt it is of the highest importance that trees should have a dressing of phosphate every year. Perhaps the ideal system of manuring would be a liberal application of poultry or pigeon manure, well rotted, every alternate year, the basic slag and superphosphate method advocated above being adopted the other year. The trees would thus receive a dressing of phosphate every year, with the addition of nitrogen and potash alternate years. If the soil was very chalky of course the basic slag would be dispensed with, the dressing of superphosphate in the spring being proportionately increased.

It may be well to mention here certain rules as to the mixing of artificial manures, as many people sustain serious loss through ignorance of them. Nitrate of soda must never be mixed with superphosphate of lime, as chemical action takes place, resulting in the formation of phosphate of soda and nitric acid, which, being volatile, goes off into the air. Sulphate of ammonia, on the other hand, can be mixed with



HIDALGOA WERCKLEI.

superphosphate, but not with lime or basic slag, in which case sulphate of lime (gypsum) and free ammonia are formed, the latter, of course, going off into the air. These rules apply, of course, just as much to sowing the manures together as to mixing them before sowing.
—A. PETTS.

Liliums.

THOSE who have succeeded in blooming the canadense tribe out of doors were doubtless charmed with them. They are, indeed, elegant flowers; alas! the second year mine failed, and I have not again tried them. Roetzli and rubellum I have tried in pots. The bulbs were small; the former gave me leaves, the latter a single lovely bloom, but in the autumn, when I thought to repot them, they—the bulbs—were gone, leaving very faint traces. Harrisii, in the open, has gone the way of many Liliums; they have turned up “blank.” I have, however, some bulbs in a pot which last spring never showed up at all, so I gradually took off the top soil, expecting to find the bulb decayed. However, to all appearance there were several good bulbs, so I covered up and hoped. Still no sign, so last autumn I again uncovered very carefully, to find the bulbs apparently sound and healthy, so I put fresh top-dressing; but hitherto there is no result. Query—Should these be turned out of their pots yearly, the smaller bulbs removed and the others replanted? I happened to go into a nurseryman's place once and found the foreman engaged in this occupation, and he was potting bulbs in full confidence of bloom. I wonder if they did? Another thought occurs to me. Does a bulb occasionally take a year's holiday, and go on all right the following year? I have no absolute proof of this, but I fancy they may do so. In the starting time of Lilies outdoor I think there is every need of very careful manipulation in their vicinity. I recollect once searching for a bulb in the spring, and my factotum went roughly to work, took off a scale or two of the bulb, and damaged the shoot slightly, which was some 2 inches high. That bulb struck work, and never showed up again!

In greenhouse culture of the speciosum and auratum groups, last year's experience makes me ask, Do we in pots give them room enough? I ask this because I have one warm summer planted nepalense out of doors and the bulbs bloomed and seemed to increase in size. Then again, if auratum is planted out in a favourable situation, it will often do well for several years, whereas in 6 or 7-inch pots they often disappear. Last year I grew several of the auratum type in 8 or 9-inch pots, one bulb in a pot; the bulbs were certainly smaller this past autumn, but anyway, macranthum, pictum, and rubro-vittatum are now showing very respectable shoots, which look quite large enough for some flowers. Some are throwing up two shoots. I never desire this. The largest bulb of that peerless Lily, nepalense, sent me last year by Messrs. Wallace, the best looking bulb of that sort I have ever seen, sent me up two shoots, and though apparently strong enough for bloom only accomplished foliage. Poor satisfaction! I am almost disposed to give the palm to the Lilium, it is magnificent, and the perfume, if not too powerful, all that need be desired. It is, however, a shy bloomer, and I have never seen more than two blooms on one stalk, and we are always late in getting the bulbs. Neilgherrense, a neighbour (in the catalogue), and also a greenhouse plant, is very beautiful, a long tubular flower of pale straw colour, and quite 6 inches long. Three years following it has given me a bloom; it looked when repotted equal to repeating the performance, whilst smaller bulbs were growing. If these are easily detachable, I shall in future do so, as the smaller must have their share of the nutriment. In many of these bulbs I should not think such separation at all advisable when the whole bulb seems to have two heads coming. I do not think two heads to a Lily bulb are improving to them more than to a human being. I have grown S. Wallacei for several years in pots; the bulbs are small, and it seems to me a bulb far more devoted to increasing stock than to giving blooms. A dozen or more heads appear and grow to a foot in height; perhaps one will give a single bloom, perhaps no attempt at blossom, the pot becomes a mass of little bulbs. I have never tried it outside, but Messrs. Wallace urge me to do so. I certainly last year did put out lots of the small bulbs, but they were affronted and did but little. The bloom, however, if you do succeed in getting one, is very pretty, but of the few shoots that have bloomed, not one shoot has given me more than a single bloom.

And now I fear your readers will say that both “D., Deal,” and I give but slight praise to the Lilium tribe for perpetuality. Only this

day did I meet a friend of mine with a good man over his garden, and with a beautiful garden where many plants are most successfully grown. Two or three of us were talking over bulbs, and we drifted on to Liliums, and my friend said, “O, yes! I tried a lot of them three years ago, but they all dwindled away.” It was at my suggestion he tried them. Evidently he did not consider the experiment a success. Of the many varieties I have tried, I can only point to candidum, the Martagons, the old Turk's Cap, some of the tigrinum varieties, especially flore-pleno, davuricum and Henryi—this latter is already throwing up a head nearly an inch in diameter, but this bulb is in a border outside my greenhouse, and may receive some help in its precociousness from the hot-water pipes. This bulb is at its third season, and now besides the grand head three smaller are also showing, which looks as if it were increasing. This Lily, however, still keeps up a high price, but it certainly is not my idea of a beautiful Lily.

With all said against their perpetual character, there is much pleasure to be got out of the tribe. Harrisii, the old Martagon, speciosum (continental forms), and the common auratum can all be purchased at from 6d. to 1s., and with the exception of Martagon, which rather resents pot treatment, will do well in a sunny window, and give an infinity of delight to every lover of beauty or of flowers, and especially to invalids, to whom these gems of the floral world are a great solace. It may, however, happen to this latter class that the perfume of most Lilies may be a discomfort, especially as night approaches.—Y. B. A. Z.

Ballimore, Argyllshire.

THAT we have still a school of enthusiastic and efficiently equipped landscape designers is surely pronouncedly asserted in the finished artistic conception, whose exact presentment is depicted in the illustration furnished on this page. This rocky stream and bridge was completed from a plan by Mr. Thomas H. Mawson, and appears in his splendid work on “The Art and Craft of Garden Making” (now almost in its second edition), and from whom we have obtained permission to use the figure. The view forms part of the grounds in Major Macrae Gilstrap's charming domain on Loch Fyne. Mr. Mawson, in the book of his just referred to, goes on to say that “a good view of the mansion can be obtained from the steamers to and from Inverary, at a point near the Beacon or Otter, the new pier at Otter being on the estate. The pier is now the principal point of debarkation for the estate, but during certain months of the year the pier at Tighnabruaich has to be used, and as this is some twelve miles distant, it was considered advisable (on account of its isolation), to make the mansion and grounds in themselves as complete and interesting as possible.

“The stream has been a somewhat extensive piece of work, in connection with which the skill of Mr. Pulham has been called into requisition. A part of this work with the little bridge is shown in the illustration. In forming this work there were two considerations of a practical nature which had to be kept in view, the first being to make the banks quite safe against spates or floods, and the second to construct a series of pools for fish to sport in. As already stated, the sides of the stream were previously supported by rough irregularly built walls, the bottom of the stream being rough shaley rock; the improvements were effected by removing the walls and excavating a part of the rock, and by adding stratas of rock as shown in the illustration, the result being much more in harmony with the surroundings than the former restricted conduit.

“Ballimore is an ideal place for anyone with a love for an arboricultural or botanical collection, and this fact has been recognised and taken fullest advantage of by Major Macrae Gilstrap, whose collection of ornamental trees and flowering plants bids fair to equal that of any other place on which the writer has been engaged. The beds and borders on the terrace are planted with a choice collection of hardy perennials, florists' flowers and Roses. The walls are clothed with Honeysuckles, Clematis, climbing Roses, Wistarias, Vitis Coignetiae Magnolias, and other hardy climbers. In the quiet pools there are choice Nymphaeas and other aquatics along the margin of the stream are Iris, Caltha, Spiraeas, and other bog plants, and also large quantities of the choicer Daffodils and other bulbous plants, all of which give promise of naturalising and increasing. The terrace borders are planted entirely with hardy perennials and Roses.”



ROCKY STREAM AND BRIDGE BALLIMORE. ARGYLESIRE.



Flowers with Perfumes.—A German botanist is said to have discovered that out of 4300 species of flowers cultivated in Europe only 420 possess an agreeable perfume. Flowers with white or cream-coloured petals are more frequently odoriferous than others. Next in order come the yellow flowers, then the red, after them the blue, and finally the violet, of which only thirteen varieties out of 308 give off a pleasing perfume. In the whole list 3880 varieties are offensive in odour, and 2300 have no perceptible smell, either good or bad.

The Supply of Phosphates.—Of the world's total supply of phosphates in 1899, Florida contributed 650,000 tons; Tennessee, 500,000 tons; Carolina, 400,000 tons; Algeria, 400,000 tons; Somme, 350,000 tons; and Belgium, 200,000 tons. In 1896 the total output from these sources was 1,618,000 tons, and it has risen each year since. Of the 1899 production as much as 1,550,000 tons—or three-fifths of the whole—came from the United States alone, but the deposits in Algeria and Tunis are year by year acquiring greater importance, and may be relied upon to furnish to French cultivators the means of making good the phosphatic waste of their soils for a long time to come. It is calculated that the deposits at Tébessa, Gafsa (Northern Africa), and their environs already contribute 20 per cent. to the world's total production of raw phosphate. Out of the two and a half million tons estimated to have been obtained in 1899 it is probable that 600,000 tons were used as raw phosphate ground to powder. This would leave 1,900,000 tons for the manufacture of superphosphate, of which about three and a half million tons were produced.

The Apple the Prince of Fruits.—This is the hey-day of the Apple. It is gaining in popularity by leaps and bounds, and the result is felt in increased demands upon all nurseries. Not only do the people choose this fruit above all others, but the medical fraternity, the dietetic authorities, and the trainers in athletics unite in its praise. In Chicago there is an institution for the treatment of various ailments of the human body, exercise through the use of marvellously contrived machines being the principal remedial agent employed. The walls of the gymnasium of this establishment are placarded, among the signs being, "Breathe deeply," "Walk, walk, walk," "Eat Apples." No less an authority than Eustace H. Miles, formerly lecturer and honours coach at Cambridge University, says: "Medical science has been wont to exaggerate the importance of internal remedies, but these are not to be neglected. Of these the greatest is water. One of the best forms of water is in fruit—for instance, Apples; for here the water is soft and pure. Other fruits, vegetables, &c., have their various uses. Among these Onions and Lemons may be mentioned. But the Apple is the prince of fruits, partly because it has valuable salts, and also fibre, which our systems need." All of which is valuable to the nurseryman and fruit grower.

Japanese Floral Decorative Art.—The chief difference between the arrangement of flowers in this country and in Japan is that, whereas in this country the art is merely considered as a pretty accomplishment for gentlewomen, in Japan it ranks as a science and a philosophy which can only be mastered after several years of close study. Far from being practised only by ladies, this pretty Japanese art has amongst its devotees princes, scholars, and other prominent men, who, having retired from the cares of political life, are in search of a hobby which will afford not only amusement, but will also offer intricacies and obstacles worthy of their trained minds. All cultured people in Japan are proficient in the science, just as the better classes amongst Western nations cultivate taste in dress, or in the artistic arrangement of their household gods. The Japanese term for a flower—*hana*—also implies a blossom-clad stream, and even the stumps or branches of flowerless trees and shrubs; and their science of flower arrangement consists not only in grouping the flowers, but more particularly in grouping their leaves and twigs according to prescribed formulæ. The blossom is looked upon as a minor detail in the artistic composition, and of very small value if separated from the parent stem, whose sweeping, though artificial, curves emphasise its beauty. The whole science is therefore reduced to obtaining curves which, though really distorted, have the appearance of being true to nature.—(The March "Pearson's.")

Plantation Fences.—Fences around plantations which have recently been thinned must be kept in good repair, all overhanging branches pruned from woodland drives and paths, ditches cleaned out, and all ground work brought speedily to a close.

The Insect Enemies of Trees.—Young woods of Scotch Fir frequently fall a prey to the ravages of the Pine beetle, the insect entering the growing shoots or leader at a short distance from the tip, and by tunnelling upwards so weakening the shoot that it is readily broken over during stormy weather. The caterpillar of the Goat-moth attacks the Elm and Ash by boring into the stem, the hole thus made being about three-quarters of an inch in diameter. It is very difficult when the trees in a wood become infested with any of the numerous insect pests to deal satisfactorily with them. Prevention is the best remedy, at least in the case of the Pine-beetle, for by destroying all dead and dying wood a home for hibernating is done away with. Old stumps of trees with their decaying bark form a fruitful source of insect-breeding in our woodlands.

The Use of Phosphatic Manures.—As to the extent to which phosphatic manures are used, it seems that Germany, France, and Austria all consume rather more superphosphate than they severally manufacture. The United Kingdom and Belgium, on the other hand, consume less, and therefore have a surplus for exportation. The exports from the United Kingdom are included apparently under the head of "chemical manures," of which our shipments in 1899 amounted to 440,138 tons, valued at £2,427,046. In the average number of kilogrammes of superphosphate applied per hectare of cultivated land in each country Belgium ranks easily first, whilst Switzerland is second, North Italy third, France fourth, Germany fifth, and the United Kingdom sixth. This, however, does not tell the whole story of phosphate manuring, in connection with which the increasing use of basic slag would need to be considered, to say nothing of the phosphates applied to the land in various organic manures.

Virulence of Poison Ivy.—Poison Ivy or Oak (*Rhus Toxicodendron*) and the characteristic inflammation produced by it are known in different localities by several aliases. It appears not only as a vine, but as a bush of considerable size, and grows abundantly almost everywhere. The virulent principle of this plant, says an eminent specialist on diseases of the skin, is a volatile acid which exists in all its parts, especially in the leaves. All persons are not affected by it, some handle it with impunity. Actual contact with the plant is not always necessary for the production of poisonous effects, on account of the volatility of its active principle, and there is good reason to believe that persons sensitive to the poison not infrequently suffer from passing by places where the vine grows abundantly. The plant is supposed to be most actively virulent during the flowering season, in early summer, but cases occur with great frequency during autumn. Even in winter twigs and stems are alive to mischief to those who handle them.

The Barberry as a Hedge Shrub.—It will be seen from the appended paragraph, written to "American Gardening," that the beautiful wild Barberry or Berberis, which adorns our own rustic hedges, is equally charming in the rural districts of New York and other American States. The correspondent writes, that "among the many bright spots in childhood's memory there is none which gave more pleasure than that of the Barberry hedge which grew near the old schoolhouse—that old hedge which furnished us shade during the hot noontime play hour. The bushes with their deep green foliage, racemes of yellow flowers and hidden thorns that prevented their destruction, and later the bright scarlet berries hanging until late in winter. Perhaps the glasses of Barberry jelly that graced our mother's pantry shelves, and gave a relish to the bread and butter eaten at school, intensifies that memory. This was over thirty years ago, but the Barberry hedge still stands, furnishing shade for other children now, putting out leaves and flowers, and maturing its berries as then. At a time when there is so much call for hedging plants for our suburban homes, why would it not be well to plant more Barberries? Hardy, handsome, easily cared for and protected by sharp thorns from the depredations of stock, it seems to me to be one of the most desirable plants for the purpose, while its fruit finds a ready market wherever known. The theory that the Barberry harbours the rust fungus of Wheat has, no doubt, been one cause of its neglect as a decorative shrub. The hedge I have spoken of stood upon one of the best Wheat-growing farms in the Genesee valley, and I never heard that the rust was more prevalent there than elsewhere."



The Auricula.

THERE seems to be a ring of sadness about the veteran "D.'s" notes on the Auricula (page 241). They have gone, he says, and yet he can live on their memories. What manner of flower is this, my masters, that retains such a hold on the florist after he has given up its culture? Advance, florists! (Auricula, I was going to say), but I am afraid it cannot be. It has a few staunch adherents that manfully support it, and spring after spring bring their green, grey, and white-edged favourites together in friendly competition. But the army does not seem to grow much; the same exhibitors appear every season, with few additions. And "D." is fearful that the plant will never become really popular except amongst a few zealots. He gives his reasons for the thought, but they seem hardly sufficient to keep a flower of such beauty in the background. It may rest more with the plant and its unwillingness to adapt itself to circumstances; but be that as it may, the ardent growers of the flower are not numerous, however enthusiastic they may be.—G.

Early Potatoes.

"N. H. P." begins his article on early Potatoes, page 242, with a kind of apology for introducing the subject at all. It is hardly needful, "N. H. P.," for though Potato culture has been written up from every point of view, it is a matter of such importance that it will stand recapitulation. I am at one with the writer in what he says about varieties, and also the importance of giving them plenty of room; but is it necessary to allow first early Potatoes such as Victor and Ringleader a yard apart between the rows? If space is no consideration, all well and good, but everybody is not blessed with an unlimited supply of it, and we want to make the most of the ground. I have every reason to be satisfied with the way my Victors, Ringleaders, and Harbingers acquit themselves when planted in rows from 2 feet to 2 feet 6 inches apart. If "N. H. P." allows 3 feet between the rows of first early varieties, it would be interesting to know what space he would give to Magnums and Up-to-Dates, having regard to the taller and more vigorous habit of growth.—W. B.

Grape Madresfield Court.

OH, dear, dear! Mr. H. Richards, how dare you attempt to upset the pet theories of so many Grape growers as to the cause of cracking of the berries of Madresfield Court? Can it be that many growers who are so anxious to keep the border dry to prevent cracking are really encouraging that unsatisfactory state of affairs? Still, there is a good deal of logic in what you say, and, generally speaking, the natural way of growing anything is the right one. It cannot be natural to let a Vine go short of liquid food. I once had a Madresfield Court Vine growing at the end of a house of Muscats. Not an ideal place, perhaps, some will say; but there it was, and it received the treatment given to the latter. The berries were large and rarely cracked, but in this instance Madresfield Court showed its fickleness in refusing to colour well. It seems to me that it will not oblige in every respect. Be content with moderate sized berries, and they will colour up to the stalks, but set your heart on large ones and invariably you must forego density of colour, particularly near the stalks.—H.

Balancing the Growth of Peach Trees.

IT is quite true, "H. D." (page 237), what you say about balancing the growth of Peach trees, and it is surprising how many are deluded by those rank vigorous growths that bear little or no fruit, but rob the rest of the tree of its strength. Only recently I was in the company of a young gardener, who pointed proudly to the growth his Peach trees had made. There was no doubt about it; strong vigorous shoots here and there had left the others far enough behind, but it only required an experienced eye to see that they were ruining the future of the tree. The young man was disappointed; he had pinned his hopes on that strong wood, and it was not without some misgivings that he removed it. But he saw the logic of it when explained, and I do not think he will be deluded in the same way again. It points to the necessity, however, of repeating such lessons, and though the aged practitioner may scan impatiently "H. D.'s" practical notes as something he learnt years ago, they may be in time to prevent a young or inexperienced Peach grower from falling into a serious error.—L. L.

Royal Horticultural Society of Ireland.

ON reading the correspondence under this head (page 290), the first question which naturally occurs is, Whose property were those Chrysanthemums which Mr. Brock exhibited at the show in question? The answer to this does not appear, as far as I can see, in the letters quoted.—W. R. RAILLEM.

Late Keeping Culinary Apples.

I want to have a word, and a very serious word, too, with "G." on his most grave omission from his list of late keeping Apples of the very king of late Apples, the "finest Apple on earth," Bramley's Seedling. My dear brother, how could you do it? To leave out the Apple which is, after our glorious and ancient cathedral, Southwell, the pride and boast and glory of our city; the Apple born in our midst; the Apple which is the best cropper, the longest keeper, and the richest cooker; why it makes us Southwellites blank with astonishment. Pray see to it, and when you write again, as of course after this you will, I am sure you will also recognise the reasonableness of this remonstrance and make ample amends for your lack of memory. Your list of late keeping Apples, "G.," would be improved by the inclusion of another of our Notts good Apples, I mean Newton Wonder; and then, why should the old friend Rymer, or Caldwell, commonly called "Cawdle," be left out? and if you will put the word New before your Northern Greening, then I am with you completely. But then these are details. It is your amazing and most regrettable slip of memory, "G.," with respect to Bramley's Seedling, which has caused me to write these few words of respectful expostulation.—A. SOUTHWELLITE.

Stable Manure versus Artificial.

HAVING been interested in the current discussions by Mr. J. J. Willis and "W. D." on the above, I conclude that the following expressions from a lecture by Dr. Wilson of Carbeth, delivered before the Dumbartonshire Agricultural Society recently, may be allowed consideration in this controversy. The doctor's opinions seem closely to corroborate what "W. D." asserted in his last contribution to the discussion—viz., "artificial fertilisers are supplementary manures, and can be nothing more."

Dr. Wilson specially emphasised the fact that the proper basis of all successful manuring is well-made farmyard manure, and that the proper function of artificial manures is to supplement, and act as auxiliaries to the natural manure. As the doctor very justly pointed out, farmyard manure not only provides the fertilising matter required by the crops, but it is also the great seat and centre of that bacterial activity, without which there can be no fertility; and it also improves, as no other manure can do, the physical condition of the soil, rendering the heavy soil more open and friable, and the light soil less liable to damage by drought, the dung acting as a sponge for the retention of moisture, besides generating a moisture by its own decomposition. Dr. Wilson's lecture was notable, not only for the useful and practical information it contained, but also for the evidence it contained as to the due recognition which the biological or bacteriological branch of soil science is now receiving at the hands of our leading agricultural scientists.—NORTHERN SPY.

Scarcity of Journeymen Gardeners.

I was much interested in reading the remarks by "W. L." in your late issue, page 261, and quite agree in all he has to say. The khaki fever has, no doubt, something to do with it, but to my mind it is the very low wage, together with so few privileges attached, which is the real cause why so few young men care nowadays to take to the profession for a living. To my mind it is sad to see, in many cases, very well educated, smart young men, from eighteen to twenty-two years of age, working, "often very long hours," and taking their turn on Sunday duty, for such a wage as 16s. or 18s. per week and bothy, and very often for less. Why should they, when there are so many other employments open for young men of good character and appearance? If, after a long period of probation, they were likely to rise to a good position as heads, they would not mind. Unfortunately, really good head places are few and far between, and the wage paid for headships is, in many cases, far too small. Do I hear someone say that a man at eighteen or twenty-two years of age receiving 16s. or 18s. per week is very well paid? I ask how many there are over twenty-two, aye, and over twenty-five, getting no more? Whatever position in life a man is placed, he ought to do his very best for his employer, and the employer should show his or her appreciation by paying a reasonable wage. How often one sees an advertisement for head with the following words, *not afraid of work*, which to my mind seems an insult, and very often not more than 20s. per week and a small cottage offered as salary?—ONE WHO HAS BEEN THROUGH THE MILL.



Decorative Chrysanthemums.

THE following uncommon varieties belong to the small flowered section, and are most useful for supplying cut flowers or to be grown as plants for indoor decoration. Lizzie Adcock is a bright yellow sport from the popular Source d'Or, and therefore needs few words to recommend it, as the merits of its parent are well known. White Quintus has pure white, pointed florets; it is showy and useful. Crimson Source d'Or, though not exceptionally bright in colour, is useful. Mignonette belongs to the thread-like section, and is of a pleasing pale yellow colour. Lady Onslow, deep yellow; Mrs. Butters, white; Miss Harvey, pale pink; and Cupil, white, are four varieties belonging also to the thread section. Black Hawk is the darkest of all Chrysanthemums in colour. Edwin Smith, narrow florets, bright red in colour, chestnut reverse, is one of the best of decorative varieties. White Australie is an excellent variety for producing medium-sized blooms in quantity. Glorious is an improved Cullingfordi, and is therefore extremely valuable. Isabel Williams reminds one of Ethel in the formation of its flowers, but is more distinctly a white-flowered variety.—S. P. H.

Seasonable Chrysanthemum Notes.

THE month of April is a busy time for the cultivator of the Chrysanthemum, no matter for what purpose the plants are intended. Press of work in other departments of the garden renders the necessary work amongst the Chrysanthemums more difficult to cope with at the proper time. Failure to arrive at that perfection with some varieties that is desirable might reasonably be traced to a lack of attention at this season of the year. The point I have many times emphasised is that of attempting to grow more plants than circumstances properly admit. This is a common mistake. It is better to grow fifty plants well than spoil double that number. There is nowadays such a craving amongst cultivators, and especially exhibitors, for the inclusion of such a large number of varieties, that overcrowding too often takes place.

To an exhibitor the inclusion of new and improved varieties in any section is, of course, a distinct gain, and for this reason I advise at all times a yearly overhauling of existing lists of varieties. It is a mistake, however, to add all the sorts that are offered without any means of determining their quality or suitability for any specified object beyond the vendor's description, except of course due reliance can be placed in such. When adding new varieties a corresponding number of older and inferior sorts must of course be discarded. Now is the time to make a final selection, and remember that sentiment, which is really a weakness for any particular kind, is but of little avail when competition on the exhibition table is the object in view. There is no disputing the fact that to the exhibitor the chief credit of developing the finest blooms is due; this class of cultivator appears to be more energetic than those who simply grow large blooms for home decoration only.

Potting the plants is at the present time one of the most important of cultural details to attend to. From the time that the cuttings are inserted until the blooms are fully developed no check to that freedom of growth which is so desirable should be given. Neglect in transferring the plants to larger pots as the roots increase is one of the worst forms of check a plant can experience. If the cultivator would but remember how the plants were starved in small pots in March and April, when he is complaining in August about the loss of the lower leaves from his plants, the difficulty of solving such problems might not be so great. When a plant becomes "potbound," as it is commonly known, the moisture which it receives is so much more quickly exhausted than when more rooting space is provided; then, from want of moisture at the roots, a check takes place, either in a premature loss of leaves from the main stem at a later stage or in a stunted growth of the leading shoots, which also predisposes to an attack of insect pests. Thus the beginner in Chrysanthemum culture will see that much harm may follow neglect, even in one detail of culture.

In transferring the plants to larger pots various circumstances have to be taken into consideration. For instance, a stock of larger pots than is usually employed for Chrysanthemums may be in hand, as these are to be utilised. In a general way pots 9 inches and 10 inches in diameter are large enough for the final shift for the bulk of varieties. In this case the first shift from the cutting pot should be to those 3½ inches wide. The next time employ pots 5½ inches in diameter,

and transfer the plants from these to the 9-inch pots. When using larger pots, say 10 or 11 inches, 4½-inch pots should be used at the first shift, next 6½-inch size, and then into the final. It is only the stronger growing varieties, however, that require these extra large pots for single plants. I prefer placing two plants in each in preference to potting them singly, using the weaker growing sorts, and always the same variety, as the work of arranging the plant or the management required in developing the blooms later on might be much interfered with if two varieties are growing in the one pot. To prepare the plants for the larger pots first place them in 3½-inch size, and then into the 5½-inch size, which allows them to be the right size to occupy the 11-inch at the final potting. By this means a great saving in space is effected, as nearly double the quantity of plants can be grown in the same space.

The compost for the present potting should consist of turfy loam, two parts, to one of half-decayed horse manure, coarse silver sand, wood ashes, and charcoal in sufficient quantity to keep the whole porous. To this compost add 1½ lb. Thomson's Vine manure to every bushel. Drain the pots carefully, and pot firmly. If the roots are quite moist when potting takes place, and the soil in the same state, as it should be, no water will be required for two or three days. Stand the plants in a cold frame, facing south, on a thick bed of coal ashes, and keep the lights partly closed for a time, to induce the plants to make new roots quickly, when air in quantity should be given to induce a stocky habit of growth. To further contribute to this, draw the lights off entirely when fine during the day. Do not expose the plants to cutting winds from the east, as such exposure is all in favour of the inception and growth of the mildew fungus. Abundance of air is relished by Chrysanthemums when not in the shape of a draught.

Carefully attend to the plants for water, never allowing the roots to suffer for want of it, but remember that too much causes a stagnation about the roots, which is often the cause of a loss of chlorophyll, or colouring matter, from the leaves. To remedy such a loss keep the soil on the dry side for at least a fortnight, and with warmer weather a change for the better will soon be apparent. In stubborn cases dissolve half ounce sulphate of iron in one gallon soft water, and give the roots an occasional soaking with it. Where mildew is present apply the usual remedy of dusting the affected parts with flowers of sulphur, and maintain the atmosphere in a buoyant state.

Never crowd the plants under any pretext, remembering that maturity of the stems and leaves is the secret of high class blooms. Such maturation cannot be obtained by exposure to the full sun for a week or two in the autumn, or by the application of fire heat after the plants are housed in September. Mature the growth as it proceeds, and the leaves will show by their russetty appearance in the early autumn that such has taken place. The initial steps for this phase, then, must be laid at the present time by allowing abundance of space for each plant to grow and develop its resources thoroughly. This is really maturation.—E. MOLYNEUX.

Jottings About Tomato Growing.

THE demand for fresh juicy looking Tomatoes seems to grow apace, and notwithstanding the fact that an enormous area of glass is devoted to the growth of this particular crop, there is still less fluctuation in the price of English Tomatoes in early summer than in the case of almost any other crop. It is during August and September, when the outdoor crops come in, that the price drops sharply, but the go-ahead cultivator has by that time gathered the bulk of his fruits grown under glass. Foreign supplies are now sent into the market in fine condition in regard to appearance, but when tested in point to flavour they bear a very unfavourable comparison with home-grown Tomatoes. This gives the British grower a considerable advantage, which can be maintained by allowing the fruits to become coloured before they are picked, instead of ripening them on shelves, which is always detrimental to their flavour. Throughout April millions of Tomatoes are planted under glass, and it is surprising how varied are the conditions under which they are grown. The market grower, with specially constructed houses, sets his plants in the natural soil, which has been previously prepared by digging and manuring. A suitable distance apart to plant in such cases is in rows 2 feet apart, the plants being from 12 to 15 inches asunder. Some cultivators plant more closely, but I have never seen anything to convince me of the wisdom of such a practice, and I have seen many instances in which it has resulted in a light crop during a dull season. A simple and effectual method of supporting the plants is to strain a wire just above the surface of the soil, secure it every 2 yards to a

strong stake, then take up a string from the wire to the roof for each plant. At the roof it can be either fastened to another wire, or to a tintack driven into the sashbar. When the crop is heavy it is sometimes necessary to use a strong stake every 3 or 4 yards, fixed upright, and then connect all the strings and stakes with another horizontal string fixed midway between the soil and roof. That is the only kind of support which I now use for Tomatoes, and I find it answers admirably.

Houses at present occupied with bedding plants can usually be planted with Tomatoes during April or May. When such houses have fixed stages, an excellent plan of procedure is to obtain a number of boards, 10 inches in width, and fix them on the stage 15 inches from the side walls. A layer of turf sods, or rough strawy material, will under such circumstances provide ample drainage. When turfy loam, which has been stacked long enough for the fibre to decay, can be obtained, use it, with an addition of one-sixth of short manure and a little soot. When, however, loam is scarce, use ordinary garden soil; this does not often require the addition of manure, but a little lime may invariably, with advantage, be mixed with it. I like to start the plants in a small quantity of soil, and add more as the roots push through, for by so doing sturdy growth is produced. When only a single row of plants is arranged on either side of the house, a foot apart is a suitable distance; the remaining space on the stage can then be filled up with bedding plants, and similar treatment will suit all the occupants of the house. For each a gentle heat in the hot-water pipes is necessary at night, and during dull days, and the heat can be turned off during bright weather. By the time the Tomatoes have grown long enough to unduly shade the bedding plants the bedding season will have arrived. The "summer crop" can then have the house entirely to itself, and the cultivator has but a short time to wait before the first "Love Apples" are ripe. Odd corners in cool houses can always be turned to good account by growing Tomatoes in pots or boxes. In private gardens, where appearance has to be studied, neat boxes, a foot in depth and 15 inches in width, can easily be made; but the "market-men" often utilise Orange boxes; they last for one year, and then make good firewood.

Nearly all cultivators find a few of their plants suddenly succumb to "sleepy disease," for which there is no cure. Good preventive measures are growing the plants under airy conditions, and using, as far as possible, soft water. As soon as the leaves of a plant become flaccid the best thing to do is to uproot it, clear out the surrounding soil, and replant in fresh. Fortunately, however, this disease is not usually very troublesome. Black stripe, which may first be seen in the stem, is often a troublesome disease. As soon as it is noticed cut away the plant below the affected part, dress the soil heavily with lime, and train up a fresh leader. If taken in time such plants will sometimes quite recover; at others the stem blackens lower down, then removal, and planting young plants in fresh soil, is the only safe course to follow. Veltheimia is undoubtedly an effectual preventive against fungoid diseases; I used it last year with good results, and am extending its use this year.

Plants grown in boxes and narrow borders require plenty of feeding, and I am convinced they sometimes fall a prey to disease through being grown on starvation lines. Unless the plants are very robust, I begin to feed with liquid manure as soon as the first cluster of fruits are swelling. From that time onward, throughout the summer, a dressing of superphosphate, at the rate of 4 ozs. per square yard, should be given once a fortnight, and by the time several clusters of fruits are swelling, one part of sulphate of ammonia may with advantage be mixed with 4 ozs. of the super.

Winter Beauty has proved a grand variety for both an early and midseason crop, and this year I am growing it more largely than heretofore. Among older varieties, Up-to-Date, Frogmore Selected, Eclipse, and Chemin Rouge are hard to beat for market purposes. Duke of York, Perfection, and Sutton's Al are grand for exhibition; and Evesham Early Prolific, Ruby, and Sutton's Earliest of All are not easily beaten for growing in the open air.—H. D.

Thunbergia laurifolia.—Blue-flowering stove or greenhouse plants are by no means common, and this fine climber is worthy of attention. I saw it recently flowering well with Mr. G. Neville, gardener at Latimer House, where it is a favourite. The growth is very like that of a strong-growing Dipladenia, with bright green leaves, and Mr. Neville tells me that, like these handsome plants, the Thunbergia is apt to be handicapped by mealy bug, though none was apparent on the plants I saw there. It is of herbaceous habit, renewing itself by means of stout young growths, like a Lapageria, and the flowers occur several together on the upper parts. These are of that pretty rosy blue tint seen in a good form of Vanda cœrulea, with a deeper tint in places, and a slight suffusion of white. A rather liberal seeding of compost is necessary, the strong, vigorous roots taking plenty of feeding. When well established and growing freely a lot of moisture is needed, but in winter less will suffice. The blossoms are faintly but pleasantly fragrant.—H. R.

Obiter dicta.

THE flowers of pink Hyacinths are rarely employed in the composition of wreaths, but after having seen a large circular one almost wholly made up with pale pink or peach-coloured blooms of this fragrant, early-flowering bulbous plant, I can urge their merits as regards effectiveness when so employed. The arrangement as seen was large and imposing, as wreaths, as a rule, ought to be. No foliage of any kind was used on the wreath save with a bunch-bouquet of Lily of the Valley and deep blue Violets, which was posed above the groundwork of Hyacinths at a certain limited part of the circle of the wreath; all the rest of the circumference was as evenly arranged almost as the surface of a life-buoy, and was like the latter in shape, being furthermore closely furnished with flowers above, below, and all around. The London florists—and probably provincial ones as well—recently introduced a showy bast material to aid them in their floral decorative elaborations. This pliable stuff is decidedly ornamental and exceedingly useful, and as it can be obtained in almost any colour the designer may desire, it furnishes a very welcome adjunct to the artist, or floral decorator, who has a deal of work to execute and little to do it with. By looping up this decorative material, and by binding it around the basket, pot, box, or other receptacle used in the decorations, the artist at once presents an object clean, attractive, and, indeed, handsome.

Amongst other arrangements recently noticed in a London West End floral depot was one in which a pale blue or leaden grey coloured piece of the above material was used as a wrapping around an oblong, shallow basket-tray filled with such seasonable flowers as those of Chionodoxa Luciliae grandiflora, whose larger, paler blooms contrasted charmingly with others from the parent species, and with varieties of Scillas, single flowered blue Hyacinths, and tall, wired Lily of the Valley spikes were the only other flowers employed in what was at once a simple and very beautiful impromptu arrangement, suitable when placed on a pedestal or small table, for either room, hall, or corridor embellishment.

Those, again, who may not have seen a shower bouquet consisting of one variety of Pelargonium may very reasonably demur when one states that a properly executed bouquet of this kind is rich, imposing, and thoroughly pleasing, even to those who can boast of good judgment and taste. A few days ago a Regent Street establishment displayed a magnificent shower-bouquet, the flowers of which were entirely — what? glowing crimson Zonal Pelargoniums (Geraniums). Broad, substantial ribbons of a colour which strictly matched the flower-trusses hung far down, and upon the face of the ribbons lesser and lesser sprays were attached downward to the extremities. With fresh and finely selected fronds of Asparagus plumosus interspersed between the loosely woven trusses of the bouquet, the presentment when seen complete was such as anyone with a gush of sentiment might describe as magnificently grand. For the recess of a large drawing-room or reception-hall in some of the nobler mansions a bouquet such as the one commented on would be unmistakeably effective.

Few of the nurserymen seem to have catalogued that recently introduced Composite novelty, commonly called the Climbing Dahlia, and botanically *Hidalgoa Wercklei*. In a visit to Mr. Jones' nursery at Ryecroft, however, I was gratified to observe a very promising stock of this plant growing ahead with decided luxuriance. No one need fear that this plant will not succeed under their care; it grows willy-nilly. So far it does not seem to have proved itself a free flowering subject; but as all the plants yet seen by me have been young, it may be expected to be more profuse when the growth has become consolidated and the root system somewhat cramped. These qualifications, combined with moderate sunlight and airiness, may be relied upon to act together to draw forth flowers. About the usefulness and decorative merits of the plant opinions are unanimously in its favour.

At Ryecroft Mr. Jones has some 20,000 Dahlia cuttings under process of rooting. Begonia tubers are already sprouting, while many very vigorous plants of the double and single-flowered varieties are well established in 6-inch pots in preparation for the early summer shows. Pelargoniums of all kinds and at all stages, not forgetting the hybrid section from an original cross between Ivy-leaved and Zonal varieties, are each and all in the pink of condition. Campanula isophylla and the new C. Mayi are represented by long lines of plants in pots which are strung at about 18 inches from the sloping glass surfaces of neat, span-roofed houses.

The highly useful Neriums or Oleanders of the Nile cannot be said to have many faults, if any, in the eyes of the ordinary plant cultivator, yet somehow or other these plants, with the few faults and galaxy of grand qualities, are astonishingly seldom met with. It was with much pleasure, then, that we remarked the efforts being made by

our Lewisham nurseryman friend in the cultivating of a stock of this beautiful decorative genus, even though his present batch is small. Another deserving warm house plant was noticed here, this being the hardwood *Posqueria longiflora*, which can be treated so as to flower with exceeding abundance and regularity, the flower trusses being snow white and delightfully odorous. *Ophiopogons* for show purposes, *Adiantums*, *Palms*, *Aspidistras*, *Phyllostachys*, *Asparagus*, *Codiaeums*, *Dracænas*, *Carnations*, and of course *Chrysanthemums*, are amongst the more prominent of the decorative class of plants on view at Ryecroft at this time. The spring-flowering bulbous subjects, including also the Indian *Azaleas*, which are special features in themselves, lend their unequalled brilliance to enrich and enliven at least two long glass-house ranges.—ARGUS.

Societies.

Royal Horticultural, April 9th.

Considering the beautiful morning on Tuesday last, even taking into consideration the Easter holidays, one could have hoped to see a much larger number of exhibits than the Drill Hall contained. The labours of the Fruit Committee were very light indeed, there being only two exhibitions of fruit—one of twenty-nine dishes of Apples from Mrs. Nix of Crawley, the other being one dish of Pears and one of Apples from Earl Ilchester (gardener, Mr. Dixon).

The usual displays of spring-flowering plants from Messrs. Barr and Sons, H. J. Jones, Wm. Paul & Son (Waltham Cross), Jas. Veitch and Sons, Ltd., Peed & Son, and Wm. Cntbush & Son, were of course forward, and *Hippeastrums* from Chelsea furthermore contributed to make a bright selection.

Amongst *Oroids*, a group of *Dendrobiums* from W. A. Bilney, Esq., was perhaps the most attractive in this section. The Barr's cup competition for a group of Daffodils did not bring more than one exhibitor, and thus the cup was not awarded. No doubt the season is a late one, which would account for the failure in what ought to have been a very fine display. In the afternoon Professor G. Henslow, M.A., lectured on some of the plants exhibited, Rev. W. Wilks occupying the chair, and thirty-eight new Fellows were elected. Before introducing Professor Henslow, the secretary announced, on behalf of the Council, that the lecture at next meeting, which, in the ordinary course, would be delivered at three o'clock as usual, would not be given. The Council have arranged to hold a special meeting for that afternoon to consider the purchase of very desirable land for the site of the proposed new garden, as they have only a fortnight in which to decide in the matter, after which it would pass from their hands, which accounts for the short notice they have been obliged to give. Fuller details will be published in the horticultural press, and "The Times" newspaper.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (in the chair); with Messrs. Jos. Cheal, Geo. Kelf, S. Mortimer, Alex. Dean, C. Herrin, E. Beckett, J. Wright, Wm. Pope, J. Willard, A. Ward, G. Norman, and James Sweet.

The collection of Apples sent up by Mrs. Nix (gardener, Mr. E. Neal), Tilgate, Crawley, included good dishes of Flower of Glamis, Kentish Beauty, Hoary Morning, and others (bronze Banksian medal). Pear Bergamot Esperen came from Earl Ilchester. From the same came also a dish of Stone, or Cluster Golden Pippin Apple.

Floral Committee.

Present: Chas. E. Shea, Esq. (in the chair); with Messrs. Geo. Nicholson, R. Dean, John Jennings, Jas. Hudson, Chas. E. Pearson, C. J. Salter, J. Fraser, E. H. Jenkins, C. Dixon, Chas. Jeffries, Geo. Gordon, W. P. Thomson, H. J. Jones, J. W. Fitt, Wm. J. James, Harry Turner, Geo. Paul, Chas. T. Drury, Edward Mawley, H. Selfe Leonard, R. C. Notcutt, J. W. Barr, and W. Marshall.

Messrs. Wm. Paul & Son, Waltham Cross, Herts, brought forward a group of forced shrubby plants, which they staged on the floor, occupying the whole central length of the hall. The ever-pleasing *Staphylea colchicum* was represented by exceedingly well-flowered plants, while *Prunus triloba* and the deep yellow Anthony Koster *Azalea* each contrasted the one with the other. *Viburnum plicatum* is a shrub not frequently enough grown, but was capitally displayed in this group. *Lilacs*, *Laburnums*, and such other subjects were included (silver-gilt Banksian medal).

Messrs. James Veitch & Sons, Ltd., were forward with a group of profusely flowered *Prunuses*. These were all in 7 and 8-inch pots, and had evidently been pinched hard to produce bushy plants with well-ripened wood. The recently introduced variety bearing the name of James H. Veitch, with pink, fimbriated petals, was conspicuously fine. *P. Cerasus Wateri* is paler, and still one of the very best. Standards were also included (silver Flora medal).

From Ryecroft Nursery, Lewisham, came an extensive collection of spring-flowering bulbous flowers, shown in pots, and a back row of profusely flowered Indian *Azaleas*. What surprised and pleased most of the visitors were the masses of *Begonia Gloire de Lorraine*, comprised of plants in 5-inch pots. The quantity of bloom these plants bore

could not have been increased, and certainly the colour was richer than one usually sees. The bright blue *Hyacinth* named Mrs. H. J. Jones was prominently on view, as was the sweet Yellow Hammer. Amongst *Narcissi* were Emperor, Horsefieldi, Sir Watkin, Golden Spur, maximus, and albicans. *Tulips* were also shown in great variety (silver Banksian medal).

Messrs. Geo. Jackman & Son, Woking Nursery, Surrey, had on view the sprightly *Muscari botryoides alba*, *Incarvillea Delavayi* (a handsome herbaceous plant, suitable for immediate planting), *Primula Sieboldi*, *alba magnifica*, and P.S. Mrs. Ryder, pale mauve. A grand pan of *Puschkinia libanotica* also formed a conspicuous feature of the group. Few things amongst hardy plants are sweeter than *Primula rosea*, of which a pan was also shown (silver Banksian medal).

Recently Messrs. Cntbush & Son of Highgate, London, N., have been exhibiting large groups of one class of spring-flowering plants, instead of mixed groups. On this occasion they showed double *Tulips*, of which the varieties Murillo, pink and white; Tournesol, yellow; Couronne d'Or, orange buff; and Vuurbaak, glowing crimson, were the finest and most telling (silver Banksian). Messrs. Wallace & Co., Kilnfield Gardens, Colchester, arranged a charming group of choice spring-flowering hardy plants. *Iris stylosa speciosa* and *I. orchoides caerulea* were here, and amongst *Fritillarias* the species *F. pudica* and *F. aurea* were very fine. The South African *Gerbera Jamesonii* was here for the first time this year, and attracted many of the connoisseurs. Daffodils were also largely represented. A new species of *Dodecatheon* named *Hendersoni* was on view (silver Flora medal).

The blaze of an exhibit of Zonal *Pelargoniums*, set up in trusses or bunches with foliage in slender glasses, and above a white paper grounding and so well arranged that ladies and gentlemen are captivated by them, and the poor gardeners who are unable to equal the efforts of Messrs. Cannell wait that such fine exhibits should be seen in public. Some fine varieties were Mrs. Brown-Potter, deep pink; Mary Hamilton, crimson scarlet; Zenobia, a lighter shade; Lady Curzon, peach pink; Mr. T. E. Green, a brilliant scarlet variety. Mrs. Ewing is a good deep rose pink; and Lord Roberts, a very deep purple crimson sort, were each very select (silver Flora medal).

Messrs. Isaac House & Son, Westbury-on-Trym, Bristol, were forward with *Violets*, showing plants in pots, and others in the cut flower state (bronze Flora medal). From Mr. C. M. Bennett, Springwell Mount, Hayes, Kent, came a display of many varieties of *Polyanthus* in pots. The yellow varieties were very rich and sweet.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the chair); with Messrs. James O'Brien, de B. Crawshay, Jeremiah Colman, E. Hill, E. Ashworth, H. T. Pitt, W. H. White, F. J. Thorne, H. J. Chapman, W. H. Young, H. A. Tracey, H. Little, H. Ballantine, W. Thompson, and C. J. Lucas.

Mr. F. J. Thorne, gardener to Major Joicey, Sunningdale Park, Sunningdale, arranged a group of *Dendrobium atro-violaceum*. The plants were in small pans and baskets, and carried an immense number of spikes, some of which bore a dozen flowers. These were exceptionally large, and the sepals and petals were much whiter than is customarily the case. One plant was superb, there were 122 flowers. The same grower included in his group *Epidendrum* (*Diacrium*) *biornutum*, *Odontoglossum hastilabium*, *Zygopetalum Klabochozum*, *Cymbidium Lowianum*, with the beautiful *Cypripedium Exul*, Joicey's variety, of which we are able to furnish a fine illustration.

Messrs. J. Veitch & Sons, Ltd., Chelsea, were represented by a collection of *Epidendrums*, including *elegantulum*, *Clarissa superbum*, *Clarissa elegantulum luteum*, *Endresio-Wallisii*, *Endresii* and *Wallisii*. Messrs. Veitch also sent *Lælio-Cattleya Digbyana Trianae*, and *Masdevallia Alceste*. Mr. J. Barker, gardener to W. Burkinshaw, Esq., Hesse, Hull, exhibited *Eriopsis rutidobulbon*, *Cattleya Parthenia vernalis*, *C. Schröderæ The Gem*, and *C. S. Sunshine*. Mr. A. Chapman, gardener to Capt. Holford, Westonbirt, sent *Odontoglossum Adrianæ Countess Grey*, *O. Andersonianum Starfish*, and *Cypripedium niveum grandiflorum*.

The brightest group of Orchids in the show was that arranged by Mr. C. Whitlock, gardener to W. A. Bilney, Esq., The Grange, Weybridge. There were several superbly flowered hybrid *Dendrobiums*, with noble nobilis and *Wardianum*. *Cattleya citrina* was shown, as well as *Lælia harpophylla*, *Lycastes*, *Cypripedium* and others. Mr. F. W. Thurgood, gardener to H. T. Pitt, Esq., Stamford Hill, contributed a collection of Orchids, in which *Odontoglossums*, *Phaius*, *Galeandras*, *Miltonias*, *Cypripediums*, *Angræcums*, and a few others.

Mr. W. J. Stables, gardener to de Barri Crawshay, Esq., Rosefield, Sevenoaks, arranged a small group of *Odontoglossums* in which quality took the place of quantity. The finest were *Andersonianum Juno*, *Adrianæ Theodora*, *Dennisoniæ nebulinum*, triumphans *Raymond Crawshay*, t. *Lionel Crawshay*, t. Mrs. Crawshay, *Hallio-crispum*, *Ruckerianum rosefieldiense*, triumphans *Jupiter*, and a few others, all of conspicuous excellence. Mr. J. May, gardener to J. B. Joel, Esq., Potters Bar, showed a fine plant of *Cypripedium Rothschildianum* with two spikes, one of which carried four flowers.

Mr. Knowles, gardener to F. Crisp, Esq., Henley-on-Thames, staged a grandly flowered plant of *Lycaste Skinneri*. Mr. C. J. Salter, gardener to Mrs. Haywood, Reigate, showed a hybrid *Dendrobium* which resulted from a cross between nobilis and *Findlayanum*, and *Lælio-Cattleya Haywoodi*. Mr. W. Stevens, gardener to W. Thompson,

Esq., Stone, Staffs, exhibited some splendidly grown *Odontoglossums*, including *crispum* (?), Bobby, Wilckianum concinnum, W. Stevensi, *Adrianæ* Lady White, A. rubiginosum, and *Andersonianum* Woodthorpe variety. Mr. Stevens sent also *Cochlidia vulcanica grandiflora* and *Dendrobium Kingianum*.

E. Ashworth, Esq., Harefield Hall, Wilmslow, contributed *Cypripedium Chamber-insigne* Halli, *Odontoglossum Adrianæ* Starry Night, *Cattleya* Miss Harris var., E. Ashworth, *Lælia Jongheana* Harefield variety, and L. J. alba Ashworthæ.

Narcissus Committee.

Present: Bennett-Poë, Esq. (in the chair), with Miss E. Willmott, and Messrs. Geo. S. Titheradge, E. Bourne, Robt. Sydenham, Rudolph Barr, J. Pope, W. Poupart, W. T. Ware, G. Reuthe, W. Goldring, W. F. M. Copeland, Rev. W. Wilks, H. Kingsmith, and C. Scrase Dickens.

Messrs. J. Peed & Son, West Norwood, S.E., sent up a varied collection of *Narcissi* in pots, for which they received a silver Banksian medal. Some very choice varieties appeared in the exhibits of *Narcissi* and *Daffodils* staged by Messrs. Barr & Sons, King Street, Covent Garden; P. Purnell, Esq., and Mr. Robt. Sydenham, of Birmingham. Mr. Sydenham's little group represented bulbs grown in jars filled with coconut fibre and ground shell, with a few small lumps of charcoal at the bottom. The plants and flowers were very pleasing.

In the group sent by the Long Ditton firm were such *Narcissi* as *Duchess of Westminster*, *Horsefieldi*, *Henry Irving*, *Johnstoni*, *Queen of Spain*, the new variety *Apricot*, which appeared infinitely better than we have ever previously seen it. General Roberts furnishes a massive bloom, the perianth of which is a paler yellow than the large, well formed trumpet. Sir Watkin and *Monarch* were also specially fine. The exhibit was very extensive, embracing fully 200 vases, each containing from twelve to twenty blooms (silver-gilt Flora medal).

P. Purnell, Esq., of Streatham Hill, staged a select display of these delightful flowers, and had such varieties as the bicolor trumpet *Grandis*, the pretty *Queen of Spain*, *Victoria*, *Leeds amabilis*, *Minnie Hume*, and the handsome yellow trumpet *Daffodils* named P. R. Barr. The group was the finest Mr. Purnell has arranged during the present season.

Certificates and Awards of Merit.

Narcissus Allen's Beauty (Miss Willmott).—A very attractive flower. The perianth segments are soft cream in colour and very broad, the trumpet is clear yellow (award of merit).

Amaryllis Marathon (J. Veitch and Sons).—A variety of perfect form, with exceptionally broad segments; the colour is crimson scarlet (award of merit).

Amaryllis Avernicus (J. Veitch & Sons).—This is a pleasing variety. The scarlet segments have a band of pure white down the centre (award of merit).

Amaryllis Rialto (J. Veitch & Sons).—A grand form. The flowers are deep crimson and very large (award of merit).

Tulipa pulchella (Barr & Sons).—A dwarf growing species. The outer segments are silver rose, and the inner bright carmine (award of merit).

Odontoglossum Adrianæ Mrs. Simonds (H. F. Simonds).—A lovely form. The colour is soft yellow throughout, with sparse crimson spots on the lips and upper sepal (award of merit).

Odontoglossum Dennisoniæ nebula (de Barri Crawshay).—This is chastely beautiful. The petals are white with chocolate spots, and the sepals soft rose with chocolate markings (award of merit).

Odontoglossum triumphans Mrs. de Barri Crawshay (de Barri Crawshay).—This beautiful variety is yellow, with the sepals and petals spotted and blotched brown (award of merit).

Lælia Jongheana alba Ashworthæ (E. Ashworth).—This is a pure white form of the *Lælia* that is now so popular (first-class certificate).

Cattleya Miss Harris, var. *Edith* Ashworth (E. Ashworth).—A superb form. The colour is much more purple in the sepals, petals and margin of the lip; the centre of the lip is velvet crimson, and the throat golden, shaded crimson (first-class certificate).

Masderallia Alceste (J. Veitch & Sons).—A hybrid from *M. Veitchiana* and *M. Asmodia*; it is a beautiful shade of crimson orange (award of merit).

Epidendrum Clarissa superbum (J. Veitch & Sons).—This is a hybrid from a cross between *E. elegantulum* and *E. Wallisii*. The sepals and petals are of good size and rounded. The yellow ground colour is almost obscured by rose suffusions and crimson spots. The large lip is purple, with white at the margins (first-class certificate).

Odontoglossum Ruckerianum var. (R. Brooman White).—A charming form, which is rather small. The chocolate crimson markings are very profuse; the ground colour is whitish rose (award of merit).

Miltonia vexillaria gigantea, *Rosslyn* variety (F. W. Thurgood).—A splendid form; the colour is deep rose purple (award of merit).

Scottish Horticultural Association.

A meeting of the association was held on April 2nd; there was a large attendance. Mr. Cumming, Grantully Castle, read a paper on "Spring Bedding." He said he was led to speak on this subject because there

was so little spring bedding in Scotland. For six months in the year beds and borders were black, bare, and cheerless, and in many public parks bare earth was seen where there might be a varied and beautiful display of spring flowers. The care and attention necessary formed no reason why spring flowers should be neglected. Owners of villas in towns and the suburbs lost much of the pleasure in life through their flower beds being left empty all the winter. Though some Scottish winters were too severe, and the keen frosts might cause disappointment, the risk was worth taking, and even in the worst of winters the early *Daffodils*, *Wallflowers*, *Crocuses*, and many other early, but hardy, flowering bulbs would emerge to beautify beds and borders, all the more pleasing after a long spell of arctic weather; and the gardener's object should be to render his garden attractive all the season. Public gardens are expected to be at all times more or less interesting; but often the opposite is the case, and the beds left empty all the winter and spring months. Spring flowers can boast of more delicious odours, and far more delicacy and variety of tints. Many of the spring combinations far surpass those of autumn. Do not go in for much variety, it adds to the labour bill; whole beds of one colour is better

than mixed. Most spring flowers are dwarf in habit, and where long borders require to be filled nothing looks better than wide bands of the different coloured *Wallflowers*; they will of themselves make a flower garden gay during the early months of spring, and any quantity can be raised from seed. The *Aubrietias* are valuable and excellent spring bedders, and they continue in flower for fully two months. *Alyssum saxatile*, as a yellow, is among the most beautiful and lasting, requiring nothing particular in the way of soil, and can be produced from seed. Few things for adorning the spring garden will excel the *Anemone*; its flowers are of the most brilliant and varied hues, and its elegant foliage renders it a most useful plant in the garden. *Cerastium*, *Dactylis glomerata variegata*, alpine *Phloxes*, *Saxifragas* of sorts. *Violas* are quite indispensable for spring gardening; there are now some well-defined colours amongst them, that for effect they have no equal. There are many annuals, such as *Collinsia microphylla*, *Saponaria*, *Silene pendula*, *Eschscholtzia*, and *Candytuft*, that may be used. Mention might also be made of hardy spring-flowering shrubs, both evergreen and deciduous; then there are berry-bearing evergreens, all suitable for furnishing the flower garden. Speaking of permanent spring bedding, what is prettier than hosts of golden *Daffodils*, sheets of *Snowdrops*, and the blue masses of *Anemone apennina*? they make the lawns a very paradise in the mild and genial days of spring. Then follow the *Winter Aconite*, the *Crocuses*, *Hyacinths*; massed in colours they make a stately bed, and last a considerable time in flower. *Tulips* rank high amongst the most showy and valuable of bulbs. *Narcissus*, of which there are many species and good forms; they are an



CYPRIPEDIUM EXUL, MAJOR JOICEY'S VAR.

(See Report of Orchid Committee.)

accommodating flower, thrive well in almost any soil, but do best in a moderately stiff loam. Mr. Cumming brought his interesting paper to a close by pressing upon societies such as this, composed chiefly of practical horticulturists, to suggest, and point out where necessary, the need of public bodies giving due recognition to the embellishment of their flower beds and borders at all seasons. Public parks should lead and attract outside horticulturists in gardening matters.—P. L.

The Midland Carnation and Picotee Society.

The tenth annual report, containing full list of prizes for 1901, together with a list of some of the leading flowers in each class suitable for exhibition, and a short article on Carnation culture by Mr. Robert Sydenham, are included in the publication now issued by the Midland Carnation and Picotee Society. Wednesday and Thursday, July 31st and August 1st, have been fixed for the show, which will be held as usual in the Botanical Gardens at Edgbaston, Birmingham. Intending exhibitors are specially requested to carefully read the rules, which can be had on application to either of the secretaries, Messrs. R. Chatwin Cartwright, Middleton Dene, King's Norton, Worcestershire; or Herbert Smith, 22, Tenby Street North, Birmingham.

Edinburgh Show.

At the Spring Show of the Royal Caledonian Horticultural Society, held in the Waverley Market, Edinburgh, last week, Mr. Malcolm McIntyre, The Glen, Innerleithen, won twenty first and eight second prizes in the various classes. Mr. George Wood, head gardener at Oswald House, Edinburgh, was the second best in point of the number of prizes won. In the nurserymen's competitive section, Mr. John Downie of Beechhill Nursery, Murrayfield, swept the boards, having eleven first and three second prizes. Messrs. R. B. Laird and Sons, Ltd., Pinkhill Nurseries, Murrayfield, were not entered in competition. They, however, received the only gold medal awarded for a group of plants. Other special awards for non-competitive groups were as follows:—Silver-gilt medal to John Downie, Edinburgh, for group of plants; silver-gilt medal to Cunningham, Fraser & Co., Edinburgh, for table of alpine and spring plants; silver-gilt medal to J. & A. Glass, Newington Gardens, Edinburgh, for table of Daffodils; special award to T. Methven & Sons for group of plants; and special award to John Forbes, Hawick, for exhibit of Begonias and Pæonies. By order of the committee half-a-dozen collection boxes were placed at convenient points throughout the hall, amid appropriate surroundings of flags and rifles and heavy guns, on which placards were affixed inviting contributions for "The Scotsman" shilling fund.

The Midland Daffodil.

The date of the exhibition of the Midland Daffodil Society, to be held at the Edgbaston Botanical Gardens, Thursday and Friday, April 25th and 26th, as originally arranged, is confirmed. The Royal Horticultural Society is sending a deputation from London for this occasion, and a large and most representative exhibition is expected. Miss Willmott, the Rev. S. E. Bourne, the Rev. G. H. Eagleheart, and F. W. Burbidge, Esq., M.A., have kindly consented to act as judges. Notice of entry for competitive exhibits should be sent to Tenby Street, Birmingham, not later than Tuesday, 23rd; but where entries can be made the previous week this should be done. It is hoped to hold a conference some time during the meeting, when any suggestions could be brought forward and discussed. The report of last year's proceedings included a schedule of the handsome prizes offered at the coming exhibition, amounting in all to over £100, and which may be obtained from either the treasurer, Mr. Robert Sydenham; or the secretaries, Messrs. Joseph Jacob and Herbert Smith. The National Auricula Society (Midland section) will hold its annual exhibition in connection with the above on the first day only.

Edinburgh Market Gardeners.

A lecture under the auspices of the committee of the Edinburgh Market Gardeners, was delivered on March 27th, in the hall of the Highland and Agricultural Society, George IV. Bridge, Edinburgh, by Mr. F. W. E. Shrivell, Tonbridge, Kent, on "Experiments with Chemical and other Manures on Fruit and Market Garden Produce." In the course of his remarks the lecturer pointed out that, along with Dr. Bernard Dyer, he had been carrying on experiments on vegetables, fruit, and Hops at Tonbridge, Kent, for about seven years. The idea, he said, was to find out whether it was cheaper to use heavy dressings of farm manure, light dressings of such, light dressings *plus* varying quantities of chemicals, or whether it was possible to grow the produce with chemicals alone. The results obtained, the lecturer said, were most interesting and conclusive. Where chemicals had been used, the produce in some cases had been doubled as compared with that produced when the land had been treated only with a dressing of farm manure. The chemicals used were nitrate of soda, superphosphate of lime, and basic slag or kainit. In treating with Strawberries, the lecturer said that on a five years' record a light dressing of farm manure, and nitrate and other chemicals, gave the best results, far exceeding the heavy dressing of farm manure alone. With the Cabbage tribe, it was demonstrated that it was possible to grow them much cheaper with simply phosphates and kainits than with farm manure; while with regard to Potatoes, the experiments showed that a certain amount of farm manure in the soil was necessary, but that when phosphates, nitrates, and kainits were added, a greatly increased crop ensued.

National Amateur Gardeners (Liverpool Branch).

The second monthly meeting of the above branch was held in the Common Hall, Hackins Hey, Liverpool, Mr. W. Muir (the president) occupying the chair. A paper on "The Management of the Garden and Greenhouse," was read by Mr. J. Devanney of Kirkdale Recreation ground. Very many timely hints were given on the requirements of the garden, short, but telling the mode of culture, and the most suitable lists of flower and garden seeds.

Royal Scottish Geographical Society.

Major E. J. Medley, 17th Bengal Lancers, lectured to the Royal Scottish Geographical Society in Edinburgh last week, his subject being "India to England via Central Asia and Siberia." The lecturer, who travelled over the entire route during last winter, with the aid of numerous limelight views described his long journey over the passes on the northern frontiers of India, and spoke of the Siberian forests, and referred particularly to the pleasures experienced in long distance stage travelling in Russia. He also gave a general description of the characteristics of Siberia and the Siberian railway, now nearing completion, and by which, he said, if all went well, one might a year hence hope to book right through from London to Port Arthur. The traffic which had sprung up since the railway was opened was almost incredible. A hearty vote of thanks was accorded to the lecturer, on the motion of General Chapman, who occupied the chair.

Devon and Exeter Gardeners' Association.

At the meeting of the members of the Devon and Exeter Gardeners' Association, held at the Guildhall, Exeter, an interesting paper was read by Mr. R. W. Hodder, gardener to Mrs. Trevor Barclay of Torquay on "Is Gardening a Science?" He claimed gardening *was* a science, because it would not submit itself to the ideas of art with anything like a good grace. Nature must be strictly adhered to, her laws followed, as far as possible, if the garden was to be a place of beauty. The natural slope of the ground and its surroundings must be taken into consideration if it was intended that it should assume the beautiful. In that respect gardening was a science, for what was science but a knowledge of Nature and her laws? All a gardener's operations had to be carried out on scientific principles, for in the cultivation of plants every condition necessary for their welfare must be carried out, and all the surroundings of its natural home brought into play. He contended that as gardening was the oldest profession, and was prosecuted on physiological principles, it was a science.

Croydon and District Horticultural Mutual Improvement Society.

The fortnightly meeting was held in the society's room at the Sunflower Temperance Hotel on Tuesday, April 2nd. Mr. M. E. Mills, The Gardens, Coombe House, presided over a good attendance. The preliminary business being disposed of, the chairman introduced Mr. Newell, The Gardens, Fairlawn, Wimbledon, who gave an interesting and seasonable paper on "Floral Decorations." The lecturer emphasised the importance of using few but well-chosen flowers and of gracefulness in arrangement. An interesting discussion on the various styles of arrangement and most suitable materials followed. On the proposition of Mr. Kromer, seconded by Mr. Glasscock, the society's vote of thanks was accorded Mr. Newell. The room was made very attractive by a beautiful group of flowering plants exhibited by Messrs. Peed & Son, consisting of Lilacs in variety, Staphylea colchica, Spiræas, Lily of the Valley, Narcissi, Ghent and Indian Azaleas, &c. Mr. Mills brought four good plants of Acalypha hispida. The secretary brought a fine stem of Dendrobium Ainsworthi Virgil, bearing forty-one flowers. On the proposition of Mr. Turney, seconded by Mr. Kromer, a vote of thanks was accorded the exhibitors. The secretary announced the next paper would be given on April 16th by Mr. J. Chapman; subject, "Cypripediums," illustrated by a fine series of water-colour paintings and cut flowers, &c. A vote of thanks to the chairman closed a very interesting meeting.

Birmingham Gardeners' Association.

"The Gardens of the Riviera" was the interesting subject, illustrated with lantern slide photographs, given on Monday, last week, before a good attendance, by Mr. H. H. Thomas, sub-editor of "The Garden." The lecture was rendered additionally interesting and instructive from the fact that the essayist, during a residence of about two years at the Riviera, studied the flora and plant scenery there. He was thus all the more enabled to deal with the subject in a practical manner, as well as to illustrate it with photographic pictures taken by himself, showing also several of the principal buildings of some of the towns along the western Riviera, in association with such as Palms, Agaves, Aloes, Cacti, Bamboos. In proposing a hearty vote of thanks to the essayist, Professor Hillhouse dwelt at considerable length upon the auspicious climatal conditions of the Riviera in relation to the capability of the exotic plants cultivated there to withstand degrees of frost that would prove fatal to the same species grown in the greenhouses in our own country. He likewise read a letter, recently received by himself, from Mr. W. W. Wills, late president of the association, from the Riviera, containing a long list of flowers blossoming there during last winter. In additional illustration of the subject of the evening Mr. W. Garliner exhibited sprays of Acacias dealbata (the Silver Wattle of Australia), and A. longifolia; also flowers of the popular Anemone coronaria imported from the Riviera, the latter flower being there publicly designated Rose de Nice.



Fruit Forcing.

Cherry House.—Trees started at the new year have completed the stoning process, and directly this is completed the fruit commences colouring, and takes its swelling for ripening. The temperature may now be raised, but it must not exceed 55° to 60° at night and 65° by day from artificial means, with a little ventilation constantly, increasing it at 70°, and, subject to the "crack" of air at the top of the house, close at that temperature. The heat, however, must not be allowed to exceed that degree in the early part of the day without full ventilation, for ripening Cherries are very liable to crack in a close moist atmosphere. From the commencement of colouring until the trees are cleared of their fruits syringing must cease, or the fruit will split and be spoiled, but a good moisture should be maintained in the house by keeping the surface of the border moistened as it becomes dry, or if the trees are in pots sprinkle the floor two or three times a day, avoiding, however, a stagnant atmosphere. Aphides must be kept under by an insecticide, but fumigation only can be had recourse to after the fruit commences ripening. The border must not lack moisture, and liquid manure should be liberally accorded to trees in pots.

Melons.—Secure every ray of light to plants swelling their fruits by keeping the glass clean, and supply water liberally to the roots, or liquid manure, providing plenty of atmospheric moisture. Overcropping not only renders the fruit small, but prejudices the quality, which is proportionate to the amount of solidified matter and its transformation in ripening. This is best effected by a somewhat dry and warm atmosphere, with diminished supplies of water at the roots, but there must not be any deficiency until the fruit commences ripening, and not then if the plants are to continue for a second crop. A little air constantly will keep the fruit steadily ripening and prevent its cracking. During the setting of the fruits a drier condition of the atmosphere and soil is advisable, but the soil must not become so dry as to cause the foliage to flag. Attend daily to setting the flowers, stopping the growths as the blossoms are fertilised. Keep the temperature at 65° to 70° at night, 70° to 75° by day, and between 80° and 90° with sun heat, ventilating carefully at all times, avoiding sudden fluctuations in the moisture and of temperature.

Plants in pits and frames are showing fruit, and unless they are sufficiently numerous to insure two to four fruits on a plant, setting at the same time or thereabout, it is advisable to remove the first flowers, as with more shoots there will be no difficulty in securing five or six pistillate blossoms of simultaneous growth on each plant, which should be fertilised. Maintain good linings, bottom heat, and a dry condition of the atmosphere when the fruit is setting. After the fruits are set let them be raised on a flower pot, with a slate intervening above the foliage. Earth up the plants as they advance in growth, having this effected before the fruit is set, as it cannot well be attended to afterwards in frames. Make new beds, and put out plants, sowing, potting, and otherwise preparing for planting successional beds.

Vines.—*Early Forced.*—Early Grapes are readily had where there are proper structures for fruiting the canes, and then are stout and thoroughly ripened. Better results, however, are had by planting the Vines out in beds, with hot-water pipes in a chamber, as in growing Cucumbers and Melons, than by having the Vines in pots. If the beds are 3 feet or 4 feet wide they answer admirably when drained, and about 15 inches depth of soil provided, cut-back Vines being the best for planting. Train the canes over the glass, just keeping their principal leaves clear of it, then the wood will be short-jointed and thoroughly solidified. Pinch the laterals at the first joint, and to one of subsequent growth. The principal leaves must on no account be prejudiced by laterals. Stop the canes at 6 to 8 feet of growth, and if disposed to push laterals strongly at the joints immediately below the stopping pinch them closely, allowing the laterals lower down to extend a little, so as to appropriate the surplus sap, and cause that part of the cane to thicken equally with the upper portion.

Grapes Ripening.—The berries swell considerably after colouring commences, and to secure the full swelling of the fruit a genial condition of the atmosphere must be maintained. Afford a thorough supply of water or liquid manure to the root, as early Grapes severely tax the energies of the Vines, and though aiming high, perfection in colour is not always attained. A liberal and constant supply of warm air greatly favours the ripening process, especially if combined with a low night temperature, say 60° to 65°, and 70° to 75° by day from fire heat, and 80° to 85° from solar influences. Red spider is almost inseparable from forced Vines. Syringing the leaves of the Vines with a solution of softsoap, preferably paraffin, not more than 2 ozs. to a gallon of water, is a safe but tedious method of freeing Vine foliage from red spider. In supplying liquid manure at the commencement of colouring afford it early in the day, so that surplus moisture may pass off before closing time. When the Grapes are fully ripe, only afford sufficient heat to

prevent the temperature falling below 60°, maintaining a moderate amount of moisture for the benefit of the foliage. If the weather prove bright a light shading, or a double thickness of herring or single pilchard netting over the roof-lights, will assist Black Hamburgs in retaining colour.

Succession Houses.—Early and close attention should be given to thinning the bunches and berries, as each surplus bunch or berry takes from the ultimate size and finish of those left for the crop. Likewise in disbudding and stopping, every needless growth is only so much wasted energy. A margin must be left for extension at stopping, so as to prevent ultimate crowding, and this will insure steady supplies of nourishment, which means root action proportionate to the foliage to digest it. Afford proper supplies of water, and feed with liquid manure or top-dressings of fertiliser washed into the soil.

Vines Swelling their Crops.—A moist atmosphere is essential, damping the house two or three times a day, and occasionally with liquid manure, as Peruvian guano, 1 lb. to 20 gallons of water, or neat stable and cowhouse drainings diluted with six times the bulk of water. These evolve ammonia vapour steadily, which, in small amounts, is certainly beneficial to the foliage and inimical to red spider. Admit a little air early, increasing it with the advancing temperature, and maintain it at 80° to 85° through the day from sun heat; close early so as to raise to 90°, and admit a little air before nightfall. A temperature of 60° to 65° at night, and 70° to 75° by day, is sufficient from fire heat, never losing an opportunity of dispensing with it in favour of that of the sun, as there is both economy and health in it.

Late Houses.—As soon as the best shows of fruit can be distinguished commence disbudding, and when the shoots are advanced one or two joints beyond the bunch take off their points where the space is limited. Pinch the laterals to one leaf above the bunch and remove those below, except from the two lowest leaves, which pinch at the first joint, also the sub-laterals to one leaf. When the bearing shoots are a good distance apart all the laterals may be left, stopping these and sub-laterals below the fruit to one joint as made, but above the bunch they may be allowed to extend two or three joints, or until the space is fairly covered with growth, then keep them well in hand. Close the house early in the afternoon, with plenty of atmospheric moisture, syringing the Vines at closing time, but not after the bunches show.

Young Vines.—Those allowed to break naturally and assisted with a little fire heat when the buds have grown about half an inch make rapid progress, but they need not have a higher temperature than 50° to 55° at night, and 60° to 65° the day after the leaves appear, relying mainly on sun heat, with gentle warmth in the pipes on cold days. Remove all buds except one at each break, retaining the strongest, and leave the shoots about 18 inches distance apart on both sides of the cane. Crop permanent Vines lightly, but supernumeraries may carry full crops, always having regard to attaining perfection in colour and finish.

The Kitchen Garden.

Potatoes.—The early varieties of Potatoes laid rose end upwards in shallow boxes, where they have developed sturdy purple sprouts under the influence of light, may now with advantage be transferred to a sunny position in drills 4 inches deep and 2 feet apart. Place the tubers 1 foot apart in the drills, and cover the growth carefully with a fine mixture of soil, wood ashes, and leaf mould. The rest of the space may be filled in with the ordinary soil. Under favourable conditions as to weather the sprouts will soon push through, when care must be taken that they are not injured by frost. Temporary protection in the shape of dry litter should be at hand to shield the growth against the effects likely to be caused by sudden sharp frosts.

Beet.—Dell's Crimson Beet is one of the best for ordinary table use, while Pragnell's Exhibition may be sown for competition purposes. Blood Red is an excellent sort, while the Turnip-rooted is useful for shallow soils. Beet requires a good loamy soil, well worked by deep digging. Manure if added when preparing the soil should be placed in the bottom spit, where the tap-root will in the course of the season find it. Manure in the surface spit is likely to cause forked roots, and spoil the shape of any variety. The best soil is one well manured for a previous crop, so that there is no occasion to add fresh manure. Land that has been well exposed to the weather can be broken up more readily, and brought to a well pulverised condition, as the particles fall easily. Having made the surface fine, draw drills a foot apart and half an inch deep. In these sow the seeds thinly, or drop two or three seeds 9 inches apart, eventually thinning out to one.

Calery.—Seedlings should be pricked out now on a bed of good soil in a frame. Forming the bed on a spent hotbed is a good plan, but failing that, place a layer of manure on a hard bottom, and cover with 3 or 4 inches of soil. Into this prick out the plants, or they may be placed in boxes. A two-light frame will, however, hold a considerable number. Seed for the late crop may be sown in pans or boxes in a greenhouse, the plants being ready for pricking-out on an outdoor bed in May.

Turnips.—Early Milan and Early Snowball are excellent varieties for sowing now. Make shallow drills with the back of a rake on good rich ground, and sow the seed sparingly. In a warm, moist period the seed will soon germinate. Thin as soon as practicable to a reasonable distance apart.

Vegetable Marrows.—Plants to place out on rich beds in May, with due protection, should be raised from seed sown in pots at the present time. Drain and partly fill 3-inch pots with loamy and turfy material. Press one seed in each pot, covering with soil; place in a warm structure until germination ensues, then grow on in a cooler and more airy structure, such as a greenhouse or frame, until large enough to plant out.

Lettuce.—Successional sowings of the Cabbage and Cos varieties should be made in drills drawn a foot apart. All the Year Round and Continuity are first-class Cabbage varieties, and Bath or Brown Cos and White Cos are suitable.

Radishes.—Any of the varieties of Radishes which are most appreciated should be sown broadcast, but scatter the seed thinly, and protect until it has well germinated.

Parsley.—A main sowing may be made either in a bed or in long drills where it is convenient for gathering. To secure fine roots free thinning is indispensable.

Young Gardeners' Domain.

Hippeastrums.

THERE are few flowers that have risen higher in favour of late years than the Hippeastrum. Comparatively easy of culture, these South American bulbous plants make a magnificent show when in flower during the early spring. The flowers are generally in pairs borne on stout hollow stems; if the stems are extra large, three, or even four flowers may be expected. The colours are in various shades of white, scarlet, and crimson.

For a commencement of Hippeastrum culture a few bulbs should be obtained of varieties having different colours, increasing these either by parting the side shoots that are thrown up from the bulb or by saving and growing from seeds. Seeds should be sown when thoroughly ripened in well drained pans and placed in a temperature of 60° to 65° Fahr. When large enough to be handled the plants may be placed three in a 60-sized pot. After making sufficient growth repot singly into the same sized pot. Keep them growing in a temperature of 65° to 70°, repotting when found necessary into 48's. They must not be dried off before the first flower is obtained, this usually taking place in the third year.

When flowering bulbs have been obtained the method of culture should be altered. The plants should then be dried off annually, repotting every second year, preferably before starting their growth for the season. Use well drained pots, which should be comparatively small to the size of the bulb. Shake off all the old soil and clean the bulbs from any impurities. Use a compost of two-thirds good loam, one-third dried cow manure, a little leaf soil, and enough sand and charcoal to keep the mixture thoroughly porous. If possible plunge the pots in a bed of spent tan, keeping the temperature of the house at 65°. Very little water will be needed at this stage, but it must be increased as the roots become active. In a short time the flower spikes will be noticed, and when fully expanded remove the plants to a lower temperature.

After flowering, the plants should be placed in a warm house to finish their growth. Afford plenty of moisture, including weak liquid manure, to enable the plants to finish well; neglect at this time will be detrimental to the crop of flowers for the next season. When the leaves have attained their full length, give all the sun possible, decreasing the supply of water as the bulbs ripen. They may then be stored in a dry place, having a temperature of 50°, until wanted for the next season. Care must be taken in watering the plants at all times, anything approaching to stagnation of the soil meaning failure. Insects will not be found very troublesome. If thrips make their appearance, syringe with any good insecticide, laying the plants on their sides during the operation.—H. C. D., *Stanmore*.



TO CORRESPONDENTS

All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Fruit Trees and Bushes (J. T. W.).—A correspondent asks, "Is a man who is leaving a house and garden permitted to take fruit trees and bushes with him, having planted them himself?" The answer is, that the occupier is not entitled to remove fruit trees or bushes at any time within a twelvemonth of the determination of his occupancy.

"Calvary Clover" (Reader).—*Medicago echinus* we believe to be the plant usually termed "Calvary Clover," so called because of the dark, blood-red cross mark on the three leaflets. The Christ's Thorn is *Palinurus aculeatus*, and, according to some authors, *Zizyphus Spina-Christi*, both being found in Palestine, and both related to our Buckthorn, *Rhamnus catharticus*.

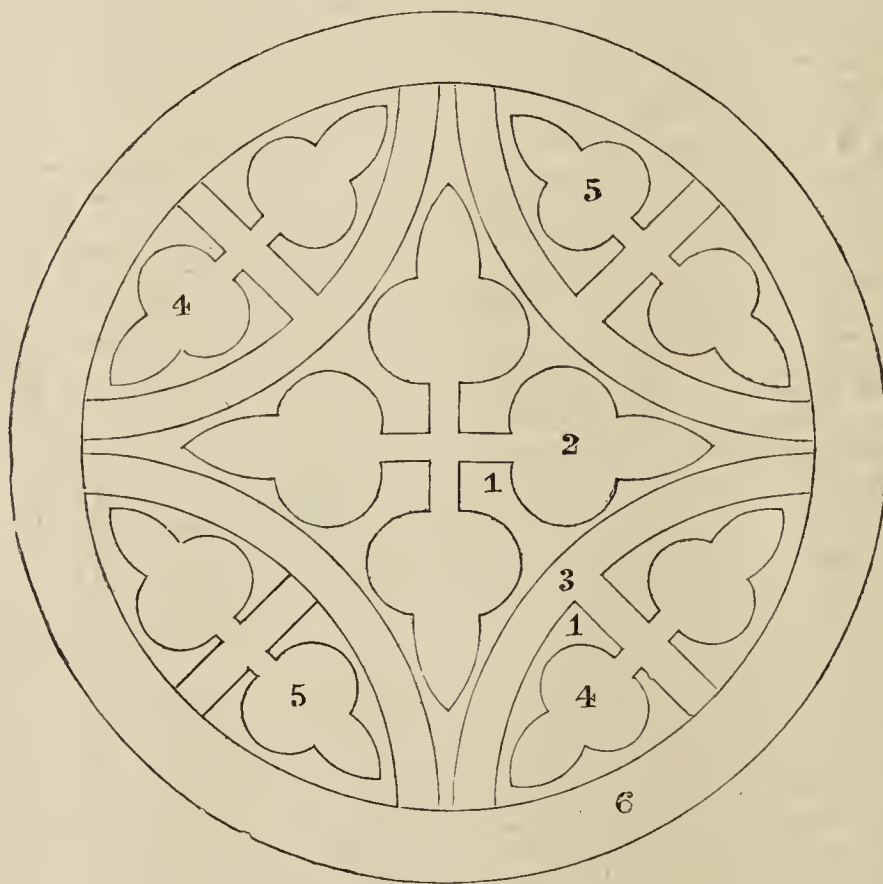
Carpet Bedding Design (Geo. Bird).—We furnish the accompanying design as a suggestion to you, for without some plan to guide one, mere text-descriptions are apt to be very confusing. Each of the panels, or "leaflet" parts of the design, should be raised up, but in such a manner as to allow moisture and rains to be retained. The bed in general should be 6 inches above the grass. At the base of the mounded or raised portions such plants as *Echeverias* should be planted to maintain a firm bottom edge.

Gardeners' Wages (St. George).

—To a great extent the wages of gardeners are governed by the general wage rate of the district in which the gardens are situated, except in a few of the chief establishments of the aristocracy, landed gentry, and wealthy proprietors, who take special interest in their gardens, and very properly remunerate a man according to his skill and attainments, local circumstances having no weight in the matter. It is no doubt true that men who accept positions where the wages are low, only do so as a matter of convenience until they can find a better appointment. It is only natural that they should do so, and it has not infrequently happened that a gentleman has been a loser rather than a gainer under those

circumstances. We wish the case was exactly the reverse—namely, that employers could see the advantage of engaging well-trained, intelligent, and competent gardeners, and remunerate them according to their skill. We are intimately acquainted with many cases where the so-called "cheap gardeners" are in reality very costly in the end, and on the other hand we are proud to know many men who are well remunerated, and whose economical working prove that they are really the most inexpensive of servants. Besides this, a capable and enthusiastic man will make far more than one blade of grass grow where only one grew before—to be figurative, and the utilitarian yield and enjoyment of a garden under his care will be infinitely greater. Wages are likely to rise all round, however, from the fact that journeymen gardeners are now scarce, so keep up heart.

Begonia Gloire de Lorraine Propagated from Leaves (W. H. P.).—The leaves that have been struck in cocoa-nut fibre refuse, and since potted off into 60-size pots, and these are fast filling with roots, will in due course push stem-growth and leaves after a rootstock has been formed. It is necessary that some elaborated matter be accumulated before buds can be developed, this being effected at the upper part of



CARPET BEDDING DESIGN.

- 1, Groundwork of *Herniaria glabra* or *Mesembryanthemum cordifolium* variegatum; 2, *Alternanthera amena*; 3, *Iresine* of any good or striking variety; 4, *Alternanthera paronychioides*; 5, *A. aurea*; 6, two rows of *Echeveria secunda glauca*, with a little *Sedum glaucum* between. In the centre you could have a neat little *Trachycarpus* (*Chamaerops*) *excelsus*, and toward the apex of the middle panels neat plants of *Pandanus Veitchii*. *Carex brunnea* could also be used effectively.

the rootstock produced at the base of the petiole of the leaf, just beneath or level with the surface of the soil. In some cases top growth does not issue for a considerable time, the leaf-raised plants taking a rest or remaining apparently stationary for several weeks or even months, though really making provision for top growth in the form of the essential bud formation. With the exercise of patience we have no doubt of the rooted leaves or plants pushing top growth vigorously—at least, such is our experience. Probably it will be towards the end of summer before this will be pronounced, the variety being a winter-flowering one.

Manure from Stables where Horses are Fed Regularly with Carrots and Occasionally have Condition Powders for a Mushroom Bed (H. K.).—The Carrots being only given once, or even twice a day in moderate quantity, will not materially affect the manure prejudicially for growing Mushrooms, nor would the condition powders render the manure injurious to a Mushroom bed. It is different when the Carrots are given in such amount as to render the droppings "loose," and the horses are subjected to doctoring treatment through ill-health, then the manure is not of a suitable nature, though good results have been attained by using a considerable quantity of strawy litter with the manure so as to insure the generating of a mild, steady, prolonged heat, securing slow decomposition, and the prevention of the material forming a close, wet, soapy mass. Even in case of the droppings being fairly dry it is advisable to employ a considerable portion of short litter with the manure, only the rougher portions, such as may be effected by a fork, being removed.

Treatment of Lilacs in Pots after Flowering (W. S.).—We presume the plants are such as have been prepared for forcing by being grown purposely in pots, in which case the plants will have a better root system than those lifted and potted early in autumn. The plants that were forced to flower at Christmas should be kept in a light airy position in a house from which frost is excluded until the weather becomes warm and settled towards the early part of May, or even the middle of that month, assigning them an open, but sheltered situation. It is necessary that the plants be well hardened off before placing outdoors. The plants that flowered during April should be continued under glass till the middle or end of May, though they may, if properly hardened off, and a sheltered situation can be accorded them, be placed outdoors after the weather becomes genial at the end of April or early in May. It is well to bear in mind that Lilacs do not answer well for forcing two years in succession, consequently two batches should be kept, one to remain in the ground outside while the other is being forced. In such case it is usual to cut back the growths after flowering to within 2 inches of the starting point of the previous year. This results in sturdy new growths made under favourable conditions of sunshine, and the plants in the following year will form growths usually well set with flower buds, and be suitable for forcing the following winter.

Vine Leaves Affected with Spots on Under Side (J. J.).—The leaves are what is known as warted, the warts, or spots, being merely small excrescences that form on the back of the leaves, at first green but afterwards turning brown or black. They are regarded as due to a sort of extravasation of sap through the skin of the leaf, but are really due to the enlargement abnormally of the cells adjacent to the stomata, respiration being interfered with, and the leaves consequently injuriously affected. They certainly are the outcome of ill-health on the part of the Vine, most commonly induced by a too close atmosphere saturated with moisture. This appears the treatment to which the Vines have been subjected, and for which you are certainly not responsible, but commendably are having recourse to a more suitable régime. Yet a Vine badly affected by warting is a long time in recovering; indeed, cannot do so fully until new growths are produced in the following year. The warting, however, unless very excessive, do not materially prejudice the perfecting of the current crop of Grapes nor the formation of good buds for another season, and the wood matures well. The Vines, however, appear in a bad state at the roots, the border being low, close, and wet, hence there is nothing to wonder at in the leaves flagging considerably at an earlier stage after an hour's sunshine, inasmuch as many root fibres are quite lifeless, therefore sufficient water and nutrient matter is not supplied by the roots to meet the requirements of the leaves for evaporation and elaboration. It will probably be necessary to lift the Vines and give them the advantage of a raised and properly constructed border to attain good results.

Names of Plants (C. W.).—The bloom is that of a well coloured *Dendrobium nobile*, though nothing out of the common; always willing to help you. (*Aspirant*).—1, *Oxalis cernua*; 2, *O. c. fl.-pl.*; we should be pleased to receive the notes you suggest. (*A. L.*).—1, *Chionodoxa Luciliae grandiflora*; 2, *Narcissus Johnstoni* Queen of Spain. (*Albert Hayes*).—1, *Dendrobium atro-violaceum*; 2, *Streptosolen Jamesoni*; 3, *Primula rosea*; 4, *P. Sieboldi* var. (*R. A., Ripley*).—*Narcissus incomparabilis* Cynoure.

Next Week's Events.

Tuesday, April 16th.—Brighton and Sussex Horticultural Society's Spring Show (two days); Croydon and District Horticultural Mutual Improvement Society, paper on "Cypripediums" by Mr. H. J. Chapman.

Covent Garden Market.—April 10th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, cooking, bush. ...	5	0 to 7	0	Lemons, Messinas, case	9 0 to 12 0
" Californian, case	10	0	12 0	Oranges, case ...	15 0 25 0
Cobnuts, doz. lb., best ...	6	0	0 0	Pears, $\frac{1}{2}$ case ...	14 0 16 0
Grapes, black ...	2	0	3 0	Pines, St. Michael's, each	2 6 4 6
" Dutch, lb. ...	1	6	2 0		

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	0 to 3	0	Horseradish, bnch. ...	1 2 to 1 6
" Jerusalem, sieve	1	6	0 0	Leeks, bunch ...	0 1 $\frac{1}{2}$ 0 2
Asparagus (Sprue Grass)	0	0	10	Lettuce, doz. French ...	1 0 1 4
" English, 100 ...	4	0	4 6	Mushrooms, forced, lb. ...	0 8 0 9
" Giant, bundle ...	15	0	20 0	Mustard and Cress, pnnt.	0 2 0 0
" Spanish, bundle ...	1	9	2 0	Onions, Dutch, bag ...	5 0 0 0
" Paris Green ...	5	0	6 0	" English, cwt. ...	5 0 0 0
Batavia, doz. ...	2	0	0 0	Parsley, doz. bnchs. ...	2 0 3 0
Beans, French, per lb. ...	1	0	1 2	Potatoes, cwt. ...	3 0 7 0
" Jersey, per lb. ...	2	0	0 0	" New Jersey, lb	0 5 0 6
Beet, red, doz. ...	0	6	0 0	Radishes, doz. ...	0 9 1 0
Broccoli, bush. ...	0	0	1 0	Rhubarb, doz. ...	1 5 1 9
Brussels Sprouts, sieve ...	1	0	2 0	Savoy, tally ...	4 0 5 0
Cabbages, tally ...	3	0	5 0	Scotch Kale, per bushel ...	0 6 1 0
Carrots, doz. bnch. ...	2	0	3 0	Seakale, best, doz. ...	14 0 18 0
Cauliflowers, doz. ...	1	6	3 0	" 2nd, doz. ...	6 0 8 0
Celery, bundle ...	1	0	1 9	Shallots, lb. ...	0 4 0 0
Chicory, Belgian, lb ...	0	4	0 0	Spinach, bush. ...	4 0 5 0
Corn Salad, strike ...	1	0	1 3	Tomatoes, Canary, case	4 0 4 6
Cucumbers, doz. ...	3	0	5 0	Turnips, doz. ...	2 0 3 0
Endive, doz. ...	1	3	2 0	Turnip tops ...	0 9 1 0
Greens, bush. ...	1	0	1 6	Watercress, doz. ...	0 6 0 8
Herbs, bunch ...	0	2	0 0		

Average Wholesale Prices.—Plants in Pots

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz. ...	12	0 to 13	0	Ferns, var., doz. ...	4 0 to 18 0
Acers, doz. ...	12	0	24 0	" small, 100 ...	10 0 16 0
Aralias, doz. ...	5	0	12 0	Ficus elastica, each ...	1 0 7 6
Araucaria, doz. ...	21	0	30 0	Foliage plants, var., each	1 0 5 0
Aspidistra, doz. ...	18	0	36 0	Genistas, doz. ...	8 0 12 0
Aspidistra, specimen ...	15	0	20 0	Geraniums, scarlet, doz.	6 0 10 0
Azaleas, various, each ...	2	6	5 0	" pink, doz. ...	8 0 10 0
Boronia, doz. ...	20	0	24 0	Hyacinths, doz. ...	6 0 12 0
Cinerarias, doz. ...	6	0	8 0	Hydrangeas, white, doz.	18 0 24 0
Crotons, doz. ...	18	0	30 0	" pink, doz. ...	18 0 24 0
Cyclamen, doz. ...	8	0	10 0	Lycopodiums, doz. ...	3 0 4 0
Dracaena, var., doz. ...	12	0	30 0	Marguerite Daisy, doz. ...	8 0 10 0
Dracaena, viridis, doz. ...	9	0	18 0	Mignonette, doz. ...	6 0 9 0
Erica, various, doz. ...	8	0	18 0	Myrtles, doz. ...	6 0 9 0
Euonymus, var., doz. ...	6	0	18 0	Palms, in var., doz. ...	15 0 30 0
Evergreens, var., doz. ...	4	0	18 0	" specimens ...	21 0 63 0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums, doz. ...	5	0 to 6	0	Mignonette, English, doz.	6 0 to 9 0
Asparagus, Fern, bunch	1	6	2 6	Mimosas, bnch. ...	1 0 0 0
Azalea, doz. bnchs. ...	5	0	6 0	Narcissus Ornatus, doz.	4 0 6 0
Camellias, white, doz. ...	2	6	3 0	" Campenelle, "	1 0 1 6
Carnations, 12 blooms ...	1	6	2 0	" Soliel d'Or, "	1 0 1 6
Cattleyas, doz. ...	10	0	16 0	Odontoglossums ...	4 0 5 0
Daffodils, doz. bnchs. ...	2	0	8 0	Primroses, yellow, doz. ...	1 0 1 6
Eucharis, doz. ...	2	0	3 0	Roses, Niphetos, white,	
Freesia, doz. bnchs. ...	1	6	2 6	doz. ...	1 0 3 0
Gardenias, doz. ...	3	0	0 0	" yellow, doz. (Perles)	2 0 4 0
Geranium, scarlet, doz.				" red, doz. ...	2 0 3 0
bunches ...	6	0	8 0	" Catherine Mermet,	
Hyacinths, doz. bnchs. ...	8	0	12 0	doz. ...	3 0 5 0
Lilium lancifolium album	3	0	5 0	Smilax, bunch ...	3 0 4 0
" rubrum	3	0	5 0	Spiraea, doz. bnchs. ...	6 0 8 0
" longiflorum ...	4	0	6 0	Stock, white, doz. bnchs.	2 0 2 6
Lilac, white, bunch, ...	3	0	5 0	Tulips, yellow, doz. bnchs.	9 0 12 0
Lily of the Valley, 12 bnchs.	8	0	12 0	" white, " "	10 0 12 0
Maidenhair Fern, dozen				" red, " "	6 0 8 0
bunches ...	4	0	8 0	Violets, single, doz. bnchs.	0 9 1 0
Marguerites, white, doz.				" double, doz. bnchs	1 6 2 6
bnchs. ...	3	0	4 0	" Star, " "	1 6 2 0
" yellow, doz. bnchs.	2	0	3 0		

Trade Catalogue Received.

Edward Gillett, Southwick Nurseries, Southwick, Mass, U.S.A.—*Hardy Ferns and Flowers; Shrubs, Roses, &c.*

Phenological Observations.

APRIL 12TH—18TH.

Fri. 12 Song thrush lays.
Sat. 13 Stock dove lays.
Sun. 14 Redbreast hatches.
Mon. 15 Willow warbler heard
Tu. 16 Blackcap heard
Wed. 17 Frog tadpoles hatch
Thr. 18 Marsh titmouse note ceases.

PLANTS DEDICATED TO EACH DAY.

Thick-leaved Saxifraga (Megasea).
Green Narcissus (Double "Telemonius.")
Borage.
Green Stitchwort.
Wild Tulip.
Friar's Cowl Arum.
Old "Musk Narcissus."

Gardeners' Provident and Charitable Institutions.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.



Field Culture of Potatoes.

IN view of the fact that during the last four years the value of Potatoes has been much more than normal, chiefly owing to the fact that the crops, from one cause or other, have been deficient, and this in spite of the last four summers having been drier than an average, the growth of this large item of the nation's food supply is very important, and every factor which makes for or against its successful cultivation is worthy of the closest consideration. We therefore welcome the report of the Notts authorities on experiments with Potatoes at three different stations, as being one more chapter in the book of reliable agricultural knowledge.

Experiments were conducted at three stations: Althorpe, in Lincolnshire, on land which would be difficult to excel in productiveness, and which is peculiarly adapted to the growth of Potatoes—viz., the best description of warp; at Hodsock, in North Notts, on deep sand on gravel, but so closely bordering on a limestone district as to make it doubtful whether the sub-strata include limestone or not; and also at Blidworth, in the neighbourhood of Nottingham. Althorpe we know, and Hodsock we know, but whether the land at Blidworth be strong or light we know not, but fancy that it inclines to the former quality. As in all experiments, however carefully conducted, the results are very anomalous, and go to show the unreliability of conclusions drawn from isolated cases, and the necessity for suspending judgment until a general average can be arrived at, based upon a number of trials carried out on various soils under various conditions of weather and cultivation.

We notice that at the three stations different varieties of Potatoes were used, and it is but natural that varieties should be chosen for trial which are well known in the neighbourhood as being suitable to the soil. It is, however, desirable that experiments at different stations should as regards minor details be fairly uniform, particularly as regards manures and varieties of plants to be tested, and in relation to this matter we entirely agree with the agricultural correspondent of the "Yorkshire Post" when he says, "While it is impossible not to commend this form of work, it would seem to be extremely advisable that there should be some uniformity in these experiments, in order that the results might be taken as a whole, subject to perhaps a few local variations in some of the tests, that the country at large might benefit more distinctly." This is one more argument against locally managed efforts and in favour of the organisation of extensive trials directly by the Board of Agriculture. It would certainly not be difficult for the Board to give sufficient direction to the efforts of county authorities to attain more uniformity than there is now.

At Althorpe, on the rich warp, the manure which brought about the best results was a mixture of $1\frac{1}{2}$ cwt. nitrate of soda, $1\frac{1}{2}$ cwt. sulphate of ammonia, and 6 cwt. of superphosphate. The striking fact about this mixture is the absence of kainit, but this soil is rich in potash, and the mixed manures used generally by the farmers of the district contain little or no potash. Of the varieties tried British Queen was the most successful, and County Councillor the least. British Queen was ahead on all the different manures, but only took third place on the unmanured plot, being beaten by both Prime Minister and Cigarette. This is natural, for British Queen has a short haulm, and requires forcing treatment. We should not recommend it for poor land, but on fairly good red soil limestone we know an instance where British Queen produced 10 tons of sound ware per acre, and nearly double the crop produced by Up-to-Date, grown in a neighbouring field. This was in the season just past. Besides various mixtures of artificials, each variety was

tried with 18 loads of dung per acre. The average yield of the eight best kinds grown thus was 6 tons 5 cwt. per acre, and the average for three years was 8 tons 7 cwt. The same kinds grown without manure produced 4 tons 15 cwt., and for three years 7 tons 1 cwt.

Here we see what a very poor under average yield was that of last year, and also that the unmanured land suffered more than that upon which dung was used. The average of the eight varieties grown with the artificial mixture we mentioned above, in addition to the dung, produced 9 tons 1 cwt., and those manured with 4 cwt. nitrate of soda and 6 cwt. of superphosphate, produced 8 tons 1 cwt. (also used in addition to the 18 tons of dung). In reckoning the profit and loss on the manures the Potatoes were valued at 50s. per ton, which is much less than good ware has been realising, but decidedly less than Potatoes from this land would fetch on a seven years' average. At Hodsock, on the contrary, 50s. would do very well to take as an average value, the Potatoes grown there being of good autumn quality, but not using well nearer spring when prices are usually higher. At Hodsock only Up-to-Dates were planted. Two unmanured plots produced 5 tons per acre, 10 cwt. kiln dust produced 6 tons 14 cwt., 10 tons of dung produced $7\frac{1}{2}$ tons, but none of these produced so much as 10 tons of dung, $1\frac{1}{2}$ cwt. nitrate of soda, 4 cwt. super, and 2 cwt. kainit. On allotment trials at Blidworth 1 ton per acre of kiln dust produced the heaviest crop, which shows the wisdom of using manures which are suitable to the texture of the soil, for we could hardly expect a ton of kiln dust to act as well mechanically on dry sand (too dry already) as on heavy retentive soil.

Here Scottish Triumph was at the top of the trials with 10 tons 4 cwt., Cigarette being second with 9 tons; but on unmanured land Scottish Triumph was very low down, as also was Up-to-Date. We see here how necessary it is to study the habits and needs of the various kinds before choosing which to plant. At the regular trials at Blidworth similar results obtained as on the allotments, but 10 cwt. kiln dust produced more Potatoes than 1 ton did. We wonder whether the soil for the regular trials was lighter than the allotment field, for perhaps a ton of very dry kiln dust was too much on dry land in a dry season. In valuing the relative results of the different manures at Blidworth the labour of application does not appear to have been added, as it should have been, thus favouring the dung as against the artificials, and both as against unmanured plots. Kiln dust appears to carry the palm at Blidworth, as 10 cwt. beat all other manures and mixtures, and produced on two years' average a profit of £3 15s., as against £2 17s. produced by a mixture of nitrate, phosphate, and kainit.

Work on the Home Farm.

Matters are improving, for though the atmosphere is still very chilly, the wind is in the south-west, and the outlook a little more like spring. The land is in fairly dry condition, and the drill may be seen at work in every direction. Reports as to the seed bed are very diverse; some farmers are quite sanguine as to the crop, and declare they never saw Barley go in better, whilst others, and these mostly hail from the strong land parishes, shake their heads and say that only the rapid approach of summer would have induced them to drill under recent conditions. They hope for the best, but do not expect it.

The cold weather has had its natural effect on the root supply, and all will be consumed before May. We saw a man to-day opening a Mangold pie which he said had been put by entirely for summer use. It was a very big heap to have come from less than 2 acres of land. He is a small farmer, and says that he had an idea that he could not grow Mangolds properly, until by good fortune he one year sent for his seed from a well known first-class firm of seedsmen. The crop surprised him, and he has fore sworn cheap Mangold seed for the future. If he could manage it he would keep the whole of his crop for pig food during the summer. The pig has of late been the best paying animal on the farm, and with offers of 20s. per head for eight-week-old pigs yet unborn, there does not seem to be much prospect of lower prices this summer.

Thousand-headed Kale and Cabbage must be drilled at once if they are to have full opportunity to do well. For both the land must be well manured with old well-decayed farmyard muck. The Thousand-head is a gross feeder, and will give a grand return in green food if well enriched ground be provided for it. As to Cabbage, we prefer to grow it on a seed patch and plant it out later, but of course we have to risk a dry time, which may make transplanting difficult or impossible. This system gives a few weeks longer for cleaning the land thoroughly than the other way of drilling in rows, where the crop is to stand until maturity. Planting is an extra expense, but to set against this much less seed is required.

Store cattle are selling very well, and good two-year-old bullocks are difficult to meet with. There does not look like being a large enough margin for profit for feeding unless beef rises in price. We are, however, informed that there is some probability of this occurring next month or early in June, and the information is from an excellent source.

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Journal of Horticulture.

THURSDAY, APRIL 18, 1901.

The Gladiolus.

AS the season for planting the corms
 of this stately autumn flowering
 plant approaches I wish to put
 in a plea for its more extensive
 cultivation, and state what I
 consider the best means to insure
 success; and when I write of the
 Gladiolus I write only of two sections, that
 known ordinarily as Gandavensis, and the
 other as Nancianus or Lemoinei.

Raisers and Progress.

Although we have some grand cultivators and
 raisers of seedlings now, it must ever be borne in
 mind that the French raisers gave us the start.
 Mons. Souchet of Fontainebleau originated a mag-
 nificent series of varieties, and sent them out from
 year to year under the name of varieties of Ganda-
 vensis. There is some doubt about the origin of
 this series, and question how it got the name of
 Gandavensis, but I do not think we need trouble
 ourselves about that. Year after year a small
 number of varieties are sent out, about ten or
 twelve, and, unlike many other florists' flowers,
 these continue in the French catalogues up to the
 present date.

The other section is that of the Lemoinei group.
 They are noticeable by a very large spot on the
 lower petal, so that the French call them à Grande
 Macules. Many years ago now Mr. William Bull
 of Chelsea introduced from Natal species which
 he called purpureo-auratus. He tried to induce
 some English cultivators to hybridise it and the
 Gandavensis species, but without success. How-
 ever, Lemoine of Nancy took it up, and has pro-
 duced some very pretty varieties, and afterwards
 others followed his example. It was stated as a
 recommendation for growing them that they were
 hardy, but Lemoine never said so absolutely. He
 said they were nearly hardy at Nancy, and they
 would pass through the winter if they had some
 slight protection with any kind of mulching.



READERS are requested to send Notices of Gardening
 Appointments or Notes of Horticultural Interest,
 Intimations of Meetings, Queries, and all Articles for
 Publication, officially to "THE EDITOR," at
 12, Mitre Court Chambers, Fleet Street,
 London, E.C., and to no other person and to no other
 address.

Now Nancy is not so warm as many parts of the south of England, and hence when Lemoine said that they would grow there with but little protection, it seemed that they would not want any here, and this I have proved to be correct, for I have planted them in an ordinary garden border, where they have flourished and increased considerably. My friend Mr. Burrell says that he believes that the Gandavensis would do the same, but I have never ventured to try them.

There are few nurserymen who grow Gladioli for sale; I believe there is only one in France, M. Souchet's successors. You may write to any other firm, but I believe that it is only the Fontainbleau firm that can supply the corms. Then at home we have two firms, Messrs. Kelway and Messrs. Burrell. The former of these has for a number of years grown them very extensively, having, I believe, more than 20 acres of them; while the latter has made such good use of his time that, though late in the field, he introduced some varieties which far exceed, in the size of their spike and the regularity of their form, those flowers which we have of late years received from France. I have, unfortunately, for some time not been able to see anything of the Somersetshire flowers, but I can testify to the fact that Messrs. Burrell's flowers far surpass anything that was dreamt of a few years ago.

The size of the individual blooms is twice as large as those which a few years ago we used to consider quite up to the mark. In the same way the size and form of the spike has been wonderfully improved. We have sixteen, eighteen, and sometimes twenty flowers on the spike in bloom at the same time, these fitting so closely into one another that the spike presents a most massive appearance. Mr. Kelway used to be fond of saying, when criticising some of the loose spikes which were frequently exhibited, "that a fox could run his way up through them," and what we used to call "wind spikes" were not uncommon in bygone days. They were so called because, instead of facing the person who was looking at them, they stood at right angles, and I think those who do not recollect the Gladiolus of thirty years ago will fail to have a correct idea of the change which has taken place in them.

Cultural Opinions.

With regard to its cultivation there have been, of course, as in all things horticultural, differences of opinion. First, then, as to soil. The French growers used to state ordinary market garden soil was more suited for them. On this side of the Channel growers differed much in opinion, some declaring that the soil could not be too light or poor for them, even going so far as to declare that, instead of adding anything to enrich the soil, it would be better to burn it, and so deprive it of some of the richness that it had; while others contended that all this was wrong, and that a good strong loamy soil was what suited them best.

The first of these I have never tried, and the second, owing to the character of my garden soil, I was never able to attempt; but from extensive observation I believe that this latter is correct, and that a soil which is suitable for Roses and Strawberries is well adapted for the cultivation of Gladioli; and I am afraid that gardens into which a quantity of manure has been dug every year for other crops, is too full of humus to thoroughly suit them. This is Mr. Burrell's opinion, and the success which has attended his efforts of growing them well in the Cambridgeshire soil bears out this contention.

SITUATION.—This ought to be as open as possible, fully exposed to the sun, and not shaded by trees; at the same time, it is well, if possible, to have some shelter, so as to prevent the spikes being blown about too much.

SEASON FOR PLANTING.—This, I think, may safely be said to be any time after the beginning of April; indeed, where a large quantity is grown, especially of seedlings, the smaller bulbs may be planted in March. In order to secure a succession of bloom, they should be successively planted ten days or a fortnight after each other.

METHOD OF GROWING THEM.—This may be said to be twofold, whether you grow them for exhibition, or for the ornamentation of the garden. If grown for exhibition, they should be planted in a 4 foot bed, each containing five rows; the bulbs should be planted about 9 inches from one another, so as to give plenty of room to move among them. When the plants are about a foot high stakes should be placed to each bulb, and the spike, as it advances, be tied to it with bast.

But there is still another method of using them in the garden, that is, by growing them in clumps of six to a dozen bulbs; it may not be necessary to use so many stakes here, but some must be used to prevent the tall spikes from falling about. When they are grown in this fashion, I think it would be well that one variety only be used for each clump. Such varieties as Meyerheer, Grande Rouge, and Dr. Baily make conspicuous and striking groups; some of the more delicate tinted ones, and the pure white varieties, make a pleasing contrast.

PLANTING.—In planting it is well to have some coarse white sand and powdered charcoal to place round each bulb when it is put into the soil; this will prevent damp from accumulating round the bulb, and give the young rootlets something easy for them to push through. The corms, of course, are left in the ground until autumn, and very much of the future prosperity of them depends upon whether the autumn is wet or dry.

My long experience convinces me that a wet time is injurious to them. Last autumn we had a good deal of wet, and I for one had to pay the penalty. When I lifted mine the bulbs appeared large and fat, and they were stored in apparently good condition, but a great many of them went off in a sort of dry rot during the winter, and this is the one trying thing about their growth. It is true that most garden plants are liable to troubles of one kind or another, and the Gladiolus but shares the common lot. Still, while upon the one hand it is painful to see your cherished corms dying off without any apparent reason, it is on the other satisfactory to know that your losses may be repaired at small cost. This may be done by purchasing some of the named varieties, or by getting some of the best unnamed seedlings, which can be had at a very low rate, and I think flowers to be obtained from either of these sources will satisfy the growers. —D. Deal.

Gardeners' Freemasonry.

IT is doubtful whether among the many and varied sections, professions, trades, &c., of which the community at large is composed, there exist such unanimity or friendly feeling one toward another as is found in gardening. As time goes on there are tendencies towards even a closer relation, brought about mainly by the many and increasing number of associations in provincial and suburban cities and townships. Unfortunately many country seats are so situated that the privileges of these social gatherings are denied many would-be members, simply because of the necessary long journeys involved.

There are few places, however, that do not permit of an exchange of visits between neighbouring residences, and this existing cordiality and co-operation is quite, if not more, marked among those whose work entails isolation, more or less ungenerous. Unless the both occupants are sufficiently numerous to form among themselves a debating society, the alternative is taken most frequently of calling on their nearest neighbours, to have what in gardening parlance is described as a "look round," and comparisons drawn between growing crops and displays of floral favourites of the particular season.

This interchange of thought is existent, quite as strongly marked, between head gardeners as among younger hands, and social meetings such as these tend to relieve the monotony of country life, and help to advance the object aimed at—life's qualifications. There is nothing that so well preserves a healthy tone of mind as these periodical visits; the man who habitually stays at home, and reviews none but his own work and practices, must of necessity increase yearly in narrowness of conception. There is a tendency in some to place a large estimate of superiority on the results of their own labour, and the more they confine themselves to this small area the more deeply does this "conceit" become embedded in the mind.

Nothing so soon explodes such fallacies, generated in this way, as the making of a survey round somebody else's domain—that is, a garden worthy of the name. If your own bear comparison with your neighbour's in all-round excellence well and good, but my experience is, you very often find in some important crop you are behind, or, at any rate, inferior in some respect. This is inevitable, and is as it should be, and not the most experienced of gardeners can claim an exemption from this rule.

As previously remarked, freemasonry among gardeners is a quality practically unknown in other sections of the working community; thus it happens that one gardener calls on another, and no matter how great a stranger, there is in one meeting the possibility of sociality springing into an almost spontaneous activity; an exchange of opinions on this or that theme, and experiences related, and an offer probably of help in surplus cuttings of plants of any striking favourite. This inborn mutual confidence cannot but be advantageous both to gardeners and their employers. The collection of plants in many gardens are enriched by the interchange of stock from near or distant friends.

Failure of seeds to grow sometimes happen from unexpected and unexplainable causes, and it may be an important one. The gardener then is driven by sheer necessity to solicit help from a generous neighbour. This touches the outdoor as well as the indoor garden equally. Much may be learnt by old and young in the periodical exchange of visits, and is particularly helpful to young men anxious for self-improvement. All head gardeners admit this, and encourage the use of such means towards that end, because an all-round advantage is thus gained.—W. S.

*Lælia Jongheana Kromeri.*

THE parent species of this variety is not at all a common Orchid, or at least it was but rarely met with until within the last few years. Its peculiar recurved form and soft rose-lilac flowers render it pleasing to the eyes, and give it the distinctness it possesses. The variety which we here illustrate is very much deeper in colour than the species, and probably on that account will commend itself to a greater number of fanciers. The colour of this L. J. Kromeri might be described as a bright rose-purple over petals and sepals, while the lip is very much deeper, even to purple. It is certainly a very handsome variety, and large. Mr. Ed. Kromer, Boraima Nursery, Bandon Hill, Croydon, obtained a first-class certificate for it when he presented it before the Orchid Committee at the Royal Horticultural Society's meeting of the 26th March.

Cypripedium insigne.

Common as this species is, and easy as it is to grow, it might be made far more of were more care taken in its culture. It seems to be the rule in many places that easily cultivated plants, no matter how useful, shall be neglected in some way, and

this is true of *Cypripedium insigne*. Very often the plants are left standing about, both during the flowering season and after, yet this is exactly when they need most care and attention. It will be noticed that at the time the flowers are in perfection the young growths are also starting, so that to "rest" the plants at this season is quite wrong treatment.

What they need is, as soon as the flowers are past, to be put at once into a gentle warmth and to be kept growing until the young leads are finished. Then, about midsummer or later, according as the individual plants are early or late, they should be placed in sunny frames or a light airy house, only shading sufficiently to prevent scorching of the leaves. A good crop of flowers will follow this treatment, and it is a much more sensible and natural plan than letting the plants be starved into flowering by repotting only at long intervals and allowing them to get pot-bound and weak in consequence.

Dendrobium Boxalli.

Flowers of this pretty Orchid come from a correspondent under the name of D. Devonianum, a plant it certainly resembles, but is quite distinct from. D. Boxalli is probably a natural hybrid between D. Devonianum and D. crystallinum, and is an extremely free flowering plant. The blossoms are about 2½ inches in diameter, the

sepals and petals white tipped with mauve purple, the lip blotched with yellow and mauve purple. D. Boxalli is named after one of our most successful Orchid collectors, who discovered it in Burmah in 1873.

Dendrobium albo-sanguineum.

Although this pretty species cannot be described as an easy plant to grow, yet it is a singular fact that in some places it appears to grow with the minimum of care and skill. Speaking from my personal experience of it, I have had the best results by leaving it a good deal alone when once the plants are established. The roots delight in growing over and over each other about the rods of a wood basket, each fighting for a place with the other. In no other way have I ever succeeded with it for any length of time, and I always regret when the time arrives for giving new material, or rather for renewing the baskets, as these roots must then perforce be disturbed.

It delights in a brisk heat with a great deal of moisture in the atmosphere, the kind of heat that is created by damping all available surfaces and closing the house early on a summer afternoon, the

sun running up the heat to 80° or 90°, or even higher. This sun heat, and the somewhat bare root run, has the effect of solidifying the growth as it is made, and leads to freedom of flowering and continued health. In a heavily shaded house with their roots covered with an inch or more of compressible material the plants are never satisfactory.

Dendrobium splendidissimum.

No one looking at this fine *Dendrobium* would imagine that it had the same parents as D. Ainsworthi; yet in strictly botanical reason it would, I suppose, be classed as a variety of this hybrid. Whatever we may think of it, there is no denying it is a very noble hybrid, especially

when in the form shown at the Drill Hall on March 26th. When these hybrids are common enough to be plentifully grown we shall have gay Orchid houses.

Notes on Figs Under Glass.

EARLY forced trees in pots require the ventilation of the structure increased when the fruits show signs of ripening, as is the case with Early Violet and St. John's or Pingo de Mel, and exposure to the sun greatly enhances the flavour. Many fruits, however, cannot have full exposure to the sun, but judicious pinching, thinning, and tying the branches, admit of their receiving a fair amount; and light, with a free circulation of air and freedom from water, is absolutely essential to well-flavoured Figs. This dryness of the atmosphere greatly encourages the Fig tree's worst enemy—red spider. It does not make much progress under good syringing, but when the atmospheric moisture is reduced it spreads in a remarkable manner, therefore no effort should be spared to have the foliage clean up to ripening time. Brown scale also spreads rapidly over the young shoots and extends to the fruits. There is nothing like contesting the advance of these

pests on their first appearance. A little softsoapy water applied with a sponge to the first specks of red spider on the under side of the leaves, and the young scale dislocated by a brush dipped in methylated spirit diluted half with water, saves much after trouble, but care must be taken not to injure the fruit, which is extremely tender, and shows traces of the injury to a serious, if not ruinous, extent when ripe.

Supplies of water at the roots are needed through all the stages, yet less when the fruit is ripening than during the swelling. Figs for home use should be ripe when taken from the trees; those for sending away must be gathered before they are fully ripe. Increase the ventilation at 70°, affording air constantly during the period of ripening. A day temperature of 80° to 85° from sun heat, and night temperature of 60° to 65°, is suitable.

Trees in succession houses and inside borders will need abundant supplies of water, and those in narrow borders, and carrying heavy crops of fruit, require liquid manure, with rich surface dressings. Attend frequently to tying in, thinning, and stopping the shoots at about the fifth leaf of such as are required to form spurs, and avoid overcrowding the shoots. Maintain a night temperature, after the leaves become full-sized, of 60° to 65°, and 70° by day, allowing a rise to 80° or 85° from sun heat, ventilating from 70°, closing at 80°, so as to raise the temperature 5° to 10° afterwards.

Late-house trees require syringing on fine days, sufficiently early to allow of their becoming dry before night. Ventilate in the early part of the day. Strive to secure solid growths, and close early in the afternoon, with plenty of atmospheric moisture where there is means of excluding frost, but in unheated houses afford moderate moisture only.—G. A.

Cyclopedia of American Horticulture.*

SOME time ago Messrs. Macmillan & Co., Ltd., published the first part (A—D) of a great work, which had occupied L. H. Bailey, Professor of Horticulture in the Cornell University (U.S.A.), for some years. The second volume of this elaborate work of reference has also reached us, and we hasten to describe the general plan of the publication, as specified in the part which came first into our hands. Professor Bailey, who is in the forefront of the go-ahead brigade of American scientific and practical horticulturists and litterateurs, had some years ago conceived that America was ripe and waiting for a thorough, sound, and complete cyclopedia of the art and science of horticulture, embracing also garden botany. He set to work, and with the help of an army of capable horticulturists, and others, from all over North America, he compiled, and indeed is still compiling, a literary production which will be to our American brothers-in-craft what Nicholson's "Dictionary of Gardening" is to plant lovers and cultivators in this country.

The work discusses the cultivation of flowers, fruits, and vegetables, describes all the species which are known to be in the horticultural trade, outlines the horticultural possibilities of the various States, territories, and provinces of America, and, to our minds, one of the freshest and finest features of the work is the inclusion of biographies of those persons not now alive who have contributed to horticultural progress. Another very great point in favour of the work is that all the information is from first hand, from original authentic authorities.

Some time ago we read an article by Professor Bailey in one of our American contemporaries, wherein he described "The Making of a Cyclopedia." It was not the getting together of the material for the work, but the verifying of every name, fact, and the multitudinous statements. The "proofs"—that is, the slips of printed matter fresh from the hands of the compositor, were gone over a surprising number of times. One reading would be strictly devoted to checking the names of plants, another reading would deal with the authorities for the plant names, and so on, each effort being precisely directed on one phase of the article under consideration.

We refer to these facts to show that the greatest pains have been taken so as to guarantee reliability to the books as works of reference. Without such painstaking authorship a cyclopedia would be of no worth at all. There will be four volumes altogether, and illustrations are presented on nearly every page. In all there are over 2000 original engravings. Stress is repeatedly laid in the editor's preface upon the fact that the work is essentially for horticulturists, not, however, alienating the botanist, who cannot do other than prize such compendious and useful volumes.

The beginning of the A to D edition contains an assortment of necessary explanations, and here nomenclature and pronunciation are briefly discussed. The editor states that he has desired to be conservative in the vexed question of names, a point that is particularly important when treating of cultivated plants whose names become established in the "trade" and are worth money. We have heard of new names having also brought heaps of money. A Yankee plant dealer once blazonly advertised "The great American Velvet-plant," and executed his orders with the well-known *Verbascum Thapsus*, which can be found wild on any limestone land!

Each genus of plants is first of all botanically described, then full cultural directions follow. Confused species are compared, and descriptions are furnished, so as to make matters as plain and thoroughly satisfactory as is possible. The following notes on aquatics will convey a fuller idea of the cultural articles, although, of course, each genus likewise receives due consideration.

Aquatics.

"All aquatics require a rich soil, and this without limit, a depth of water from 1 to 3 feet, and ample space to spread their succulent leaves. In a natural pond, where there is an accumulation of humus overlying a clayey subsoil, nothing more is wanted, but on a sandy or gravelly bottom it is necessary to place a layer of rich soil 12 to 18 inches deep. In artificial ponds, built of masonry, a layer of rich soil is necessary if the plants are to be planted out, as is best for *Nelumbins*. The soil best suited for aquatics is a turfy loam, inclining to heavy, and thoroughly rotted cow manure, two parts of the former to one of the latter, and, where possible, it should be composted some time before using, and turned over two or three times to thoroughly incorporate the manure. When cow manure cannot be obtained, other thoroughly rotted manure may be used. The next best fertiliser is pulverised sheep manure, but, this being less bulky and stronger in proportion, should not be used as freely as other manures; one part sheep manure to nine of soil is sufficient. Chemical manures, ground bone, horn shavings, &c., should not be used unless in extreme cases, and then very cautiously.

"DEPTH OF WATER.—In natural ponds, Water Lilies are found growing in water from a few inches to 4 and 6 feet deep, but in artificial ponds a depth of 12 to 18 inches will be found sufficient for most *Nymphæas*, and 18 to 24 inches is a good depth for *Victorias*. In constructing an artificial pond, a depth of 2 to 2½ feet is ample. Water to the depth of 12 inches above the crowns of the plants is sufficient, and a box containing the soil may be 12 inches deep. Thus a pond 2 feet in depth is deep enough, and will allow a man, with hip boots on, to walk between the plants with ease. For a small pond, less than 12 feet over, a plank laid across will suffice for all operations.

"PROTECTION.—Where severe frosts are prevalent in winter, and ice 12 to 18 inches in thickness is found, there will be danger of the roots freezing. In such cases, an additional depth of 6 inches will be a great advantage, and a protection of bracken, salt hay, green manure, leaves, or any other non-conducting materials should be used to protect the masonry, in severe weather, against expansion and breakage.

"PLANTING.—All hardy *Nymphæas* may be planted any time between the 1st of April and the 1st of September. Those planted early, other things being equal, will give good results the same season, while those planted late will get well established before winter, and will be in excellent condition to start at Nature's summons early the following spring. The hardy *Nymphæas* differ considerably as to rootstocks. Those of the native varieties are long and of a spongy, soft texture, and rambling in growth, while the European species have a much larger and very firm rootstock, and grow more compact. In planting, all that is necessary is to press the rootstock firmly into the soil, and if there is any danger of the root rising to the surface, place a brick or any weight upon it, to keep it in position until anchored by its own roots. Tender *Nymphæas* should not be planted until the latter end of May or beginning of June, according to location. They should not be planted out before *Coleus*, *Alternanthera*, and other tender bedding plants. They require to be started indoors, and will be grown in pots, which are much handier to plant than roots of the hardy varieties, and can be planted under the water with ease and facility. *Nelumbiums* should not be planted until about the 1st of May. Southward the season is earlier. The existing conditions should be such that tubers shall start at once into active growth. They should be already 'started' before setting out. The tubers should be laid horizontally in a slightly excavated trench and covered with 2 or 3 inches of soil, using a weight, if necessary, to keep the tubers in position. Plants, established in pots or pans, are very convenient for planting, and may be purchased when tubers can no longer be procured, and can be planted a month later in the season with good results.

"The *Victoria Regia* has always been an aristocrat among Water Lilies, and few cultivators could indulge in such a horticultural luxury. To grow it satisfactorily, a large surface space with a greater depth of water is necessary than for other aquatics, and a higher temperature is needed at the early stages. It can be cultivated in the open air, but artificial heat must usually be applied and protection afforded, so as to maintain a temperature of 85° Fahr. This applies more particularly to the varieties *V. Regia* and *V. Randi*. In 1898 the introducer of *V. Trickeri* brought the *Victoria* within easy reach and culture of all lovers of aquatic plants. *V. Trickeri* is entirely distinct from other known varieties, and can be grown in the open alongside of *Nymphæa Zanzibarensis* and *N. Devoniensis*, and under precisely the same conditions. When planted out about the middle of June, the plants grow rapidly, and will develop their gigantic leafage and magnificent flowers in August, and continue to do so until destroyed by frost."

The first volume extends to 509 quarto pages, and of course is arranged in alphabetical order. At a guinea each the books are remarkably cheap, and such a work ought not to be absent from any American horticulturist's library; while plant lovers in this country would certainly also find it most welcome and valuable."

* By L. H. Bailey; Messrs. Macmillan & Co., Ltd., price 21s.

Regrafting Fruit Trees.

THERE are but few gardens in which there could be said to be no advantage gained by the practice of regrafting trees of some kinds, and Apples and Pears in particular. The exact conditions that satisfy every sort is not possessed by any one garden, and only by actual experience can this particular knowledge be gained; and sometimes, too, several years elapse ere this conclusion is satisfactorily settled. Pears, perhaps, more than any fruit develop this uncertainty of trait. There is at stake not only the quality of the fruit, but uncertainty of bearing, brought about by indifferent growth, either from an excess or an insufficient vigour. Double grafting alters the character of trees, it may be favourably or unfavourably; but in the case of established trees that are not satisfactory much good may be gained. There are trees often tolerated year after year that either bear useless fruit, or it may be no crop worth harvesting, occupying space in most gardens that might be transformed in the course of a very short time into profitable ones. There is another point that comes prominently forward of late, and rightly so; and that is the supply of Apples and Pears for use in February and March, and later. There occur frequently abundance of good fruits through November, and perhaps up to Christmas; but after that date empty shelves or a very small supply remain, much to the regret of all concerned. To remedy this to some extent my practice is to reduce the stock where it can be conveniently done of the midwinter or maincrop section, and by regrafting introduce an extension of late ones. This is adopted in such instances where there are already healthy specimens, that when headed back furnish good stocks and foster parents. This latter point is important, because a poor stock is not likely to produce a good tree, and thus the uprooting and replanting with a fresh one from the nursery would be much the better policy, and the most economical course to pursue.

The two conditions under which Pears are grown—namely, wall and open air culture, need be given some intelligent thought, because some do well under one aspect, while another fails. Locality is a governing factor often in such matters. Here there were formerly several trees of that showy, though second-rate Pear, *Beurré Clairgeau*, and it was curious to note the varying characters presented both in fruit and growth of the trees. Two in particular produced such small Pears that they possessed no value either as a dessert or stewing fruit. As a rule the kind has a fairly vigorous habit, but in these two particular trees vigour was an absent quality. Three years since I decided to try the effect of regrafting with another and stronger growing kind, and results since obtained quite surpassed my expectation. Good healthy growth, followed by Pears above the average in size, is the outcome of the effort made.

In the case of healthy trees, it is remarkable in how short a time restoration to their original size can be effected by grafting, following the customary heading back. I am no advocate for the severe course adopted by some in cutting back to large branches, preferring rather to prune lightly and insert more scions. In some kinds a moderate crop has been secured in the second year following, but all cannot be depended on to respond so quickly. I can give an instance in support of this. In the spring of 1894 a strong but useless tree was headed down and regrafted with *Marie Louise d'Uccle*, a tree of which stood but a few feet away. Previous to the year named, and each year since, this particular tree has never failed of a crop more or less plentiful; the newly grafted specimen, on the other hand, took six years before it settled down to a useful state, and thus fertility was changed into barrenness. Excess of vigour in the stock accounted for this entirely, for which root-pruning did not afford a repressing influence at once. By simply leaving the main shoots unshortened, and reducing lateral spray, so that the sun and air could play on the inner portions of the tree, the needful balance is effected, and now blossom buds are plentiful on every portion of the tree, from which it is not likely to revert now.

While there is a mutual advantage of attaching a strong growing sort to a weak stock so as to bring about the infusion of the two characters, the same, or a similar gain, can be effected by grafting a weak variety on the vigorous stock. Not only is there an improvement of growth, but a larger size and better prospect of higher quality in the fruit obtained from such an union. It may not come quite so quickly, but it may be said there is gain sometimes in waiting. Old, cankerous, or trees badly infested and crippled with American blight, are no doubt better rooted up and new plantations made, but given healthy trees of moderate age I prefer to purchase grafts from the nursery rather than young trees, because a crop is much more quickly assured and more plentifully produced in a given time. Such work is better anticipated, and the heads shortened back early in the winter, but as the season is opportune for carrying out grafting, I should not hesitate even now to cut back moderately and insert grafts at once. Bleeding would be sure to intervene, but it would not last long. Trees this year are in a very backward state, which allow of the work of grafting being left later than usual. It should not,

however, be left too long unfinished, because the first, or early flush of sap, allows of the bark being raised more easily, and the more freely the bark moves the better is the prospect of a successful union.

The particular form or kind of grafting is a matter of individual taste or convenience; the most objectionable is that known as the "cleft" when applied to large trees. In large, or fairly good-sized branches, cleft grafting exposes so much of the heart wood, which must, too, of necessity perish. Inserted simply beneath the outer rind they soon become attached. In the cleft branch the scion is less likely perhaps to become displaced by wind force, but this can be lessened somewhat by pinching out the point of growth in summer, and thus preventing it from becoming unduly heavy. Stopping them, too, causes the growth to strengthen and get a firmer bark-hold.—W. S., *Rood Ashton*.

[Grafting is carried on even till June in Devonshire.—ED.]

Gadding and Gathering.

"HERE AWA', THERE AWA'."

Hippeastrums at Chelsea.

YEAR by year, as the culture of this conspicuously handsome genus of bulbous plants becomes better understood, more and more flower lovers add themselves to the existing army of devotees. Messrs. Veitch and Sons, Ltd., from their Royal Exotic Nursery at Chelsea, annually send out hundreds of the finest of new seedling varieties to all parts of the kingdom, where enthusiasts amalgamate these advanced forms with their previous stock-favourites. It is imperative on the part of gardeners and growers that they should, from time to time, add fresh, up-to-date varieties to their collections. I have a presentiment that many of our good friends "down the country" hardly recognise how far the developments of this splendid Easter flower have reached. On Thursday last, that is, April 11th, I viewed the Chelsea *Hippeastrums*, or *Amaryllis*, as even Mr. John Heal (who ought to know better!) delights to call them. I saw the Chelsea plants, as I say, and had the opportunity of comparing four or five varieties obtained from a provincial gentleman, who had elaborated magnificent praise upon them in the belief that they were equal to the most advanced types, his conclusions being based on the press reports of Messrs. Veitch's and other collections. But, lack-a-day! even he would be forced to admit that, seen alongside of the Chelsea seedlings, his productions had yet much leeway to make before they could come abreast of the advanced novelties. Sometimes the journalist labours out glowing anthologies respecting rarities or collections he is supposed to have seen, and the subjects of his references do not always bear him out; but my present expressions are without varnish, and are according to convictions.

The Chelsea *Hippeastrums* occupy a long span-roofed house, the flowering seedling bulbs being massed in one great central bed containing 1060 plants in all. These are mostly in 6-inch pots, though a proportion are in lesser sized ones, and each of them are plunged to the rims in tan bark. The more recent "breaks" are amongst the pale-coloured varieties. There were here and there on view first-flowered seedlings (two-year-old bulbs) whose blooms resembled those of a great *Lilium auratum*, but without the spots or yellow beams. It is very certain that if Mr. Heal perseveres with these whites we may yet possess an *Hippeastrum* as pure as a spotless *Madonna Lily*. A number of the bulbs had thrown up two scapes, each bearing four well-formed and developed flowers—eight flowers from one bulb. We measured a bloom borne on a four-flowered scape and thrown up by a two-year-old bulb in a 4½-inch pot, and the diameter spanned 9 inches. "The substance; what of that?" you ask. "Very fair, indeed," is my reply. The heavens had opened themselves at the time of my visit, and the roof of the glass house was like to break with the downpour of rain, so that the flowers were seen disadvantageously. Growers fully appreciate the inspissating effects of sunshine.

Many of the petals measured over 4 inches in breadth. From this collection of 1060 plants fully 1000 of them had never flowered before, so that the possibilities of so large a lot, and the interest attached in the raising of them, is sure to be great.

The æsthetic type of bloom was here—that is, one with flowing slightly twisted petals, quite a break from the rigid circular petals of the florists' form, but surpassingly beautiful. The brick-reds, pale pinks, salmon-reds, and new striped and netted varieties, were seen in numbers. Some of the deep crimson selfs are very satisfying. Violet as a colour among *Hippeastrums* does not seem improbable or impossible. A few of the deep-toned selfs were conspicuously suffused with this colour. Where so many unnamed sorts exist, it would be an endless and useless task to attempt to describe them. A large percentage of the plants bear highly superior flowers, and few or none could be detected as inferior to the highest standard. It speaks well for the worth of the selection when we consider that the Messrs. Veitch had awards of merit for three out of seven *Hippeastrums* shown by them at the last Royal Horticultural Society's meeting.—WANDERING WILLIE

Some Peeps in Rock Gardens.

SOME gardens are oppressively trim and tidy, others are wild and free, yet if we see that plants can show their beauty, and that their owners love them, we care little whether or no the gardens are quite to our tastes; we can enjoy what beauties they have. When we visit a rock garden, however, we do not expect to find straight lines, carefully dotted and trained plants, and all the evidences of tidiness



ROCKERY WITH GERANIUMS AND OTHER PLANTS.

that are to be found in the place where carpet bedding or ribbon borders are still in use. The pictures here presented are certainly not such as might be found in any formal garden, but they are such as might be taken in many of the rock gardens of the present day of moderate size, and where flowers have their requirements even more considered than garden effects, although the latter may often follow from a free use of the abundant material afforded by the wealth of shrubs, herbaceous plants, and bulbs in which the alpine grower takes delight.

The illustration on this page shows a portion of a rock garden, in which may be seen a plant of *Geranium sanguineum album*, a pretty variety of the native Blood-red Crane's Bill, a truly beautiful flower for the sunny heights of the rockery, where its butterfly-like flowers poised above the pretty leaves make a most delightful effect. Unfortunately the specimen represented is not so well in bloom as it should have been, and hardly does justice to the true worth of this pretty Geranium, which, by the way, is of a looser and more elegant habit than most of the plants of the typical species. A little further along is seen a mass of one of the *Muehlenbeckias*, pretty plants from the Antipodes, which are admirably adapted for large rockwork. The species seen in this garden was the commoner *M. complexa*, but better species for the purpose shown are *varians* and *nana*, which are of less rambling habit. The one shown was clipped back annually in spring to keep it within bounds, and it thus never grew too large. In the foreground are the leaves of *Primula cashmeriana*, which did well in the moist, peaty soil of the small flat terrace on which it was planted. To the left, but not recognisable from the indistinctness of the photograph, were groups of *Anemone ranunculoides*, a pretty little species, somewhat of the *nemorosa* type, but with yellow flowers. The form *pallida* is even prettier, with its soft, but bright, yellow blooms. Unfortunately the photograph does not show in detail the various flowers in bloom when it was taken, but one can discern a tall *Campanula*, which appears to be *C. grandis*, on a high spot behind the Geranium; and it is not difficult to fill in the picture from one's imagination with *Stonecrops*, *Pinks*, *Lychnises*, and the many more which come in midsummer to greet its sunny days. In such a garden a little water adds much to its attractions, and gives the gardener a

better opportunity of growing many moisture-loving plants. The views here shown are from different gardens, but each will give some idea of the means by which a little tank or pool may be made to minister to its owner's enjoyment of his domain.

In the figure on bottom of page 323 we have a little artificial tank, floating placidly on which are the leaves of a *Nymphaea*; from among these a few buds protrude and show colour. The best of the *Nymphaeas* for such a tank are those of the *Laydekeri* type, such as *rosea* or *lilacina*; *N. pygmæa*, with its charming form *Helvola*, and such new things as *Ellisiana*, a very lovely Water Lily. Beyond the Water Lily are the leaves of *Iris aurea*, which, unfortunately, grows too rapidly when in water for so small a tank. To the left of it, and planted on wet soil, is a clump of *Iris germanica*, with a dense-growing form of *Rodgersia podophylla* close in front. The plant in front with narrow Iris-like leaves is *Butomus umbellatus*, the Flowering Rush or Water Gladiolus. It delights in such a position.—S. ARNOTT.

A Persistent Garden Pest.

Wireworms.

CERTAIN persons when they found that the worthy gentleman Mr. Micawber purposed going into the Medway coal trade, concluded at once that it would be decidedly necessary he should visit that agreeable river. Possibly they were right; but I am sure I was justified in coming to the conclusion that when I purposed writing something about the wireworm (about as definite a phrase as if one were to say, "the caterpillar"), I had better make personal acquaintance with one. True, I had remembrances of interviews with certain "grubs," in years gone back, reputed to be "wireworms," yet I could not

have drawn a portrait of one of these from memory either with pencil or pen, nor did any notable fact remain in connection with the same, saving and excepting that one was shown to me by a gardener, whose naturally long visage gained so much extra length from the disgust with which he viewed this special enemy, that had I possessed a portable photographic apparatus I should have entreated him to remain motionless, that I might secure a "phiz" that was remarkable if not admirable. Books are all very well, but they have their errors. What was to be done? The weather precluded country excursions; could a "wireworm" be obtained close at hand?

I recollected that in my suburban garden, brick-surrounded and smoky as it is, I had seen during the previous summer indubitable "skip-jack" beetles, of small dimensions, and it followed as a natural inference, that it would be by no means unlikely that larvæ were feeding not very far off from where imagoes had been seen. Out with the spade, drive it into the peculiar composition which in town gardens we call mould! Alas! recent frosts had rendered the ground rather unmanageable, and after some efforts I fell back for consolation on the "fox and Grapes" fable—there are no wireworms here, or, if there are, they won't be worth the trouble I am bestowing upon them.

Deserting the garden for the library, I have reason, nevertheless, for dropping my design altogether; something may be said historically upon the wireworm now, as this is the season of the year when in gardening operations it is occasionally unearthed, and as very shortly, with the returning warmth of spring, its ravages will be more considerable. At a future date some additional facts may be appended regarding this rather memorable insect.

The wireworm or wireworms, for they should certainly be spoken of in the plural, though, perhaps, greater enemies to the agriculturist than to the horticulturist, exert very injurious influences in kitchen gardens during some seasons. More particularly are they likely to show themselves in ground which has been recently converted from pasture to garden ground. And it is very necessary to bear in mind that other creatures besides the *Elatér* larvæ have been, and still are, designated by this name. Millipedes and centipedes have been called wireworms, and also the larvæ of some of the *Tipulæ*.

This is nearer the mark, but still incorrect. Wireworms are the larvæ of certain beetles belonging to the family Elateridæ, a section of the Coleopterous order, including some remarkable insects. In America there are phosphorescent species, mostly belonging to the genus *Pyrophorus*. One very common in Mexico and Brazil (*P. noctilucus*) is called the Cucujó. These are used as adornments for the hair, and shed sufficient light to enable one to read. Like the glowworms, they can modify the light at will, by interposing a membranous film. This luminosity appears to come from what a writer calls its "phosphorescent bumps," though the abdomen emits a light also. But this circumstance is chiefly interesting when taken in connection with the fact that one of our British Elaters, it not more, has a similar power.

Mrs. Cox has referred to this species as the wireworm. It produces injury in hotbeds and greenhouses, where it does mischief, especially to Melons and Cucumbers. No doubt this is true in a measure, yet an investigation of the works of various authors who have published their observations on the different species of Elater, leaves us in some difficulty as to which should be most deeply stigmatised amongst them as injurious to garden or field produce. Modern entomological science, as we know, tends to the multiplication of genera, and the old genus *Elater* has been split up considerably. They are, in the perfect state, noticed by even the generally unobservant, and popularly known as "skip-jack," or "click" beetles.

Some have received distinctive English names, derived from the Latin, such as the acuminate click beetle, the long-necked, the tawny-legged, the satin-coated, the marginated, the red-tailed, and so on. This matters not much, however, to the gardener, who heeds not very much minute distinctions; so long as the general habit of the species enumerated be the same, or nearly so, he will be content to say, modifying Byron's quotation, *arcades ambo*—that is, translating freely, "blackguards are ye all."

Really destructive as are the wireworms while in that stage, the beetles they produce are highly curious, their saltatorial propensity enabling them to execute manœuvres which are puzzling, yet easily understood when explained. Kirby, commenting on Cuvier, points out that his observation regarding vertical leaps, which he said could only be taken by birds and by man, is incorrect, since the Elaters very frequently (though not always) spring in this manner. Hold one of these fellows tight so that he cannot move, and he still produces his peculiar rap, and you are surprised at the wonderful amount of strength contained in so small an organisation.

But for this provision, those of this tribe when they fell upon their backs would have exceeding difficulty in regaining their legs, and a continuance in such a posture beyond a certain time is death to beetles, as to many other insects. A beak at the extremity of the prosternum is the main agent in the movement. The head and abdominal extremity touch whatever surface the beetle may be resting upon; then, as it unbends, this point strikes into the hollow of the ring next to it, and as the back comes down to the level, the jerk mounts it into the air to a distance of 6 or 8 inches or more.

The larvæ or grubs of the different species under consideration are assuredly wiry enough to merit the common name, or, at least, the first half of it; the second is less appropriate, since they have six very distinct legs. A figure which is given in Figuiet's "Insect World," representing one, is probably much too dark, the colour being, I believe, greyish white usually, or a yellowish brown being in some instances noticed. The wireworm has been compared to the mealworm, being, tender, flat, and shining; the legs are short, adapted to the burrowing life it leads, and at the extremity is a tubercle, which serves as a fulcrum in case of need. Many years ago, Kirby, in his investigations into the economy of predatory insects, ascertained that in Norfolk and Suffolk, *Elater obscurus* (of Marsham) committed extensive ravages.

Observations made many years ago in Scotland described this as being a very injurious species there. "Indeed," says McIntosh, "the presence of wireworms in soils cropped with autumn-planted

Potatoes is more to be dreaded than the frost." The species named by Linnaeus *E. lineatus* has been repeatedly commented upon as one of the farmer's pests, though its ravages have been remarked as extending also to gardens. In addition to the tubers of the Potato, Carrots, Turnips, Cabbage, and Beans have in turn suffered from the subterranean work of the larvæ of some Elater.

The Asparagus, has its buds perforated under ground, while the offender not unfrequently escapes scot free, for owing to the mole-like life led by the wireworms, the work of their jaws is ascribed at times to worms, slugs, &c. It has been stated, too, that like the cockchafer, some at least of the species exist for several years in the larval stage, resting, at least partially, during the winter season. Not at all improbable is it, however, that under certain circumstances they feed on through the winter, as is known to be the case with many subterranean larvæ.

Deep digging has been recommended as tending to reduce the numbers of the wireworm, but it is only a very partial remedy, and of limited application. Trap-setting done at the proper season is of much advantage. The best plan seems to be that of placing slices of Potato on the points of sticks, and burying these beneath the ground to the depth of some inches. Every day or two they should be pulled up, and the "catch" disposed of by burning. Traps on the surface of the earth have also been tried with some success—not only pieces of Potato, but also slices of Turnip, and the stalks of Lettuces. A writer on gardening states, that by persevering in these modes he captured many thousands in a fortnight's time in a Carnation border, which was infested.

Spirits of tar and the refuse lime of gasworks have been also used as destructive agents where they could be applied. But the oddest remedy, perhaps, is that which checks the ravages of the wireworm by cramming it to death with luxurious food. Rape cake broken into small pieces is drilled into the ground—say a few weeks before Carrots are sown, where that vegetable is in danger. This is most effective, so it is said, in dry seasons, and the larva devours this



A TANK WITH AQUATIC PLANTS.

See "Some Peeps in Rock Gardens."

food until it dies of repletion. Perhaps so, yet I am half inclined to suppose that its death is hardly to be accounted for on the repletion theory, since over-gorging does not appear to prevail in the insect world. It may be that the oily bait is unwholesome to its constitution, though pleasant to its palate.—C.

Apple Trees for Beauty of Flowers.—Few flowers are greater favourites than those of the Apple, and they often figure in decorations. Blossoms of the Red Astrachan and Transcendent Crab are particularly large and showy.

NOTES & NOTICES

Weather in London.—On Thursday forenoon of last week some tremendous rain showers fell, and the afternoon was equally squallorous. Friday was a leaden sort of day, with now and then a sickly gleer of sunshine. The evening was clear with starlight, but Saturday morning renewed the rainfall. Sunday was of the "Scotch mist" style in the forenoon, but sunny and bright later on. Monday was fair and agreeable; Tuesday was showery, while as we go to press on Wednesday the conditions are exhilarating. Growth is now very active.

Weather in the North.—There has been from 2° to 5° of frost on several mornings of the past eight days, and a cold north-west wind prevailed throughout most of the week. Sleety showers fell on Sunday and Monday, and the hills around have fresh snow well down to the level. Wet has interfered a good deal with outdoor work. —B. D., S. Perthshire.

Appointments.—Mr. J. C. Duncan and Mr. J. G. Douglas, lately engaged in the Royal Gardens, Kew, have been appointed to responsible charges in the Corporation Botanical Gardens at Port Elizabeth, Cape Colony. They sailed on Saturday, the 13th inst. * * Mr. John Kyles, for five years head gardener to Mr. Crawford, Lauriston Castle, Midlothian, and latterly at Fullwood Park, Cheltenham, has been appointed to fill the same position to D. H. Stewart, Esq., Strathgurry, Perthshire, entering upon his duties about the beginning of June. He succeeds Mr. McDonald, who retires on a pension after a term of service bordering on half a century. * * Mr. E. Parry has been appointed head gardener to Mrs. Thurnbure, Hales Hall, Market Drayton. Mr. Parry is taking charge of Kiddington Hall Gardens till the 15th of May.

Good Friday and Gardening.—The "Newcastle Leader" points out that more gardening is done on Good Friday than on any other day in the year almost. From time immemorial agricultural labourers have dug their gardens, planted their vegetables, and sowed their seeds on Good Friday. Railway men are like hinds in this respect; they, too, do their gardening largely on Good Friday. Perhaps that has arisen, to some extent, from the circumstances that the early railway men were largely drawn from the agricultural population, though the fact that Good Friday is the only week day in the spring on which railway servants are generally free from duty may partially account for the practice. In Devon and Cornwall the superstition almost universally prevails that anything put into the ground on Good Friday is sure to grow well, and yield great increase. This circumstance is all the more curious, especially among the Methodists of Cornwall, because, though they plant their gardens on Good Friday, yet they will not begin any new work nor put off to sea on an ordinary Friday.

The Jura Flora of Yorkshire.—A catalogue of the Jurassic plants from the Yorkshire coast has been issued as one of the official natural history publications of the British Museum. The work has been prepared for the trustees of the Museum by Mr. A. C. Seward, University Lecturer in Botany at Cambridge. The series of these fossil plants preserved in our National Museum is particularly fine, its principal source being the collection of the late Mr. William Bean, of Scarborough, which was acquired by purchase in 1859. Mr. Bean was long known as an enthusiastic collector, and by means of his vast store of duplicate fossil plants he was able to make exchanges with many foreign museums. Many of the noted palæobotanists of their day made the oolitic plant-remains of Yorkshire the object of their special study, and they are in many ways of peculiar scientific interest. Rich as the collection in London is, it very far from exhausts the available material for the study of these plants, which are represented, we believe, in nearly every museum in Britain, as well as in several of the larger Continental collections. In order, therefore, to make his work as perfect as possible, Mr. Seward found it necessary to supplement the data afforded by the specimens in the British Museum by examining collections in other places, including those of Cambridge, Oxford, York, Scarborough, Whitby, Manchester, Newcastle, and Leeds, all of which are rich in Yorkshire coast plants, while on the Continent he found good collections in Paris, Stockholm, Lund, and elsewhere.

Ladies as Jobbing Gardeners.—In the Harrow district (London) it is rumoured that a lady jobbing gardener will almost at once establish herself in business there, with the object of obtaining orders in the course of the forthcoming bedding-out season. Her assistants, it is said, will be qualified disciples of the craft of Adam of her own sex. "For she is a jolly good fellow," &c.

Excerpta.—A writer to a daily paper insists that the Banana is a fruit requiring to be cooked, and ought not to be eaten raw. * * Several parts of France are threatened with serious floods. * * The funeral of Mr. Edgar Bruce, for many years lessee of the Prince of Wales Theatre, London, was remarkable for the large number of beautiful floral wreaths that decked the coffin. One of the finest was sent by the King. * * April is the month in which thunder and lightning storms, as a rule, begin in this country. * * The cuckoo was distinctly heard on Thursday, April 11th, at Wootton in Surrey.

Messrs. Protheroe & Morris' Register.—The Register of nurseries, market gardens, farms, florists' seed businesses, and partnerships, "to be let or sold," as issued by Messrs. Protheroe & Morris, 67 and 68, Cheapside, London, E.C., is ready, and will be sent to anyone on the look-out for any of the above-noted, on their application to the firm. All classes and sizes of farms, market gardens, businesses, and partnerships are ready to choose from. The county in which the business or place is situated, together with full particulars regarding them, are furnished in this "Register."

Kew Bulletin of Miscellaneous Information.—The "Kew Bulletin" of miscellaneous information is issued as an occasional publication from the Royal Gardens, Kew, price 4d. per copy, or 5d., post free. The present Bulletin contains the lists made to the Library by gift or purchase during the year 1900. The lists are printed on one side of the page only, to allow of their being cut up. It is probable that many persons and institutions will make the Kew library catalogue the basis of their own, and will use the lists of additions to supply printed slips for fresh titles.

Glasgow Parks.—Visitors to the Glasgow Exhibition this summer should not miss seeing the Camphill houses in Queen's Park, also the new houses in Springburn Park, which were recently gifted to the city by Dean of Guild Reid. In Camphill, at present, there is a large and good display of Rhododendrons. Among them is a beautiful white seedling, Veitchianum × MacMillan's Large White. In another house there is a good collection of Acers. Odontoglossums and Dendrobiums have been specially good. There is also a well-flowered batch of Kalmia glauca. The Springburn houses are now in full working order, and the Cinerarias are quite a treat. Cars run to both of these parks every few minutes, and I am sure there will be much to be seen, both in and out, during the summer.—A. B.

Sale of Mr. Philip Crowley's Library.—On Monday, 15th inst., at Stevens's auction rooms, Covent Garden, W.C., record prices were obtained for books on natural history from the library of the late Mr. Philip Crowley, of Waddon House, Croydon, and late Chairman of the Fruit Committee, R.H.S. "Biologia Centrali Americana," thirty-five vols., fetched £90; Lord Lifford's "British Birds," seven vols., £63; "The Ibis," forty-two vols., £75; "Zoological Society's Publications," £60; Dresser's "Birds of Europe," £56; "The Birds of Asia," "The Birds of New Guinea and Papuan Islands," and "The Birds of Great Britain," by John Gould, £51, £45, and £49 7s. respectively. "Monograph of the Pheasant," by D. G. Elliott, was sold for £53 11s. The 204 lots realised close on £1500.

Royal Horticultural Society: Notices.—At a general meeting of the Royal Horticultural Society, held on Tuesday, April 9th, forty new Fellows were elected, making 288 elected since the beginning of the present year, among them being Lady Anstruther, Lady Hunter, Maj.-Genl. Sir Francis Greuffell, K.C.M.G., Col. Spragge, D.S.O., and Saml. G. Buxton, J.P. * * The next Fruit and Flower Show of the Royal Horticultural Society will be held on Tuesday, April 23rd, in the Drill Hall, Buckingham Gate, Westminster, in connection with which the National Auricula and Primula Society will hold their annual show. * * A general meeting of the Fellows will be held at three o'clock to approve or otherwise the proposal of the Council to purchase land near East Darenth, in Kent, for the new gardens of the Society. * * The Society's examination in horticulture will take place on Wednesday, April 24th, at various centres throughout Great Britain. Intending candidates are requested to forward their entries at once to the Secretary R.H.S., 117, Victoria Street, London, S.W.

Meeting of Scientists.—The Congress of International Associations and Academies began its deliberations at Paris on Tuesday, April 16th. Amongst the British delegates who arrived on Monday last were Sir Michael Foster, Sir Archibald Geikie, and Sir Norman Lockyer.

Variorum.—Mr. Rider Haggard has been commissioned by a London morning paper to tour Great Britain, and write up an account of agriculture outlook. * * An enormous Pine log, 94 feet long and 19 inches square, was landed at Leith last week. It was the largest and most perfect tree in Louisiana. * * It has been suggested that a Victoria memorial garden should be designed in the grounds of Bachelors' Acre at Windsor. The King inspected the land last week.

The Cranberry Cultivated.—There has been some talk of late about planting the Cranberry on waste places. The Cranberry grows on moist, boggy spots throughout the country, but it is much more frequent in the North than in the South of England. The Cranberry is by no means hard to cultivate, provided it has moisture and some peaty earth. No doubt, it would grow in many of the lower-lying spots in the Pine country round about Woking. Planted slips soon take root if the spot is at all favourable.

United Horticultural Benefit and Provident Society.—The monthly committee meeting of this society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last. Two new members were elected. Nine members are on the sick fund, and five on the benevolent fund. It was proposed and seconded, and unanimously resolved, that a chairman and vice-chairman of committee be elected annually, at the first meeting after the annual general meeting. Mr. C. H. Curtis was elected chairman, and Mr. T. Winter vice-chairman for the ensuing year. It was resolved that 1000 agenda forms be printed, and that estimates be asked for, from firms mentioned, for the printing of the same. It was unanimously resolved that the secretary's salary for the past quarter be paid; other minor business matters were discussed.

An Auricula and Primula Exhibition.—The Drill Hall will be crowded at the meeting to be held on Tuesday of next week; indeed, if the weather is fine, what with special prizes for Daffodils, Primulas, Auriculas, and the general meeting to be held in the afternoon, habitués may almost expect a record exhibition. The Auriculas are to be shown under the auspices of the National A. and P. Society (southern section). The cold and sunless weather is again, this year, all against a good show of these sweet little flowers, yet the enthusiasts always surprise the populace. A luncheon for the judges, members, and friends of the N.A. and P.S. will be provided at the Hotel Windsor at 1.30 P.M., tickets 2s. 6d. each. Mr. T. E. Henwood, 16, Hamilton Road, Reading, will be pleased to consider any request for further information in this connection.

Swanley Horticultural College (Woman's Branch).—The annual report for 1900 comes to hand. The number of students now at the college totals eighty-three, and for them a new and revised educational course has been drawn up. The last twelvemonths has also seen the inauguration of some important changes in the grounds and buildings of the institution, rendered necessary by the progress that is being made. A special chemistry course (sanctioned by the Board of Education) has been entered on the new syllabus, so as to give the students the fullest equipment regarding soils and plant feeding, &c. The report goes on to say that:—"Head gardeners are not made in a day, hence many good posts offered to past students have had to be declined. The management feel that it is in the best interests of the college and of the students themselves, to recommend only those who are thoroughly competent to carry out the work they undertake, believing that the rise to highest positions in the gardening world will be more rapid for students thoroughly educated in scientific methods than is possible for gardeners trained in the rough and ready ways of former years." This is most certainly the proper method to follow, and would seem to do justice to parties on both sides. It also reflects well on the conductorship of the Principal, Mr. M. Eason Wilkinson, B.A., Cantab. The report is very interesting indeed, and shows that the work of the College is very varied, embracing all branches of horticulture, bee-keeping, and dairy work. The curriculum is such as ought to fit any young man or woman to be serviceable and practical producers of all those things that pertain to private or commercial gardening.

Reading Gardeners' Mutual Improvement Association.

"The Cultivation of the Gloxinia with other Plants in an Ordinary Greenhouse," was read before this society by Mr. H. House, Oaklands Gardens, Reading. The chief points touched upon were the culture from seed, by division of bulbs, and by old bulbs, and a discussion followed. The exhibits were as follows:—Mr. F. Lever, The Gardens Hillside, Cella Elliottiana from seed (cultural certificate), and Gloxinia blooms and plants; Mr. T. S. Pigg, The Gardens, Samoa, seedling Amaryllis (cultural certificate); Mr. House blooms of the following, Zonal Pelargoniums Crabbe, J. L. Baldwin, Madame Patti, Cenid, Olivia, La Noreb, Mrs. Pole Routh, and Phyllis, as well as a number of Gloxinia plants. The last meeting of the present session will be held on Monday next, when Mr. W. P. Lasbam will deal with early Potato culture.

Nurserymen and Gardener's Hallstorm Insurance Corporation, Ltd.

—We have received from the secretary a report of the sixth annual general meeting of this Corporation, which was held on the 12th inst. Many claims had been made during the year, and these were promptly settled. In 1896 there were 235 policies in force at premiums amounting to £681 ls. 9d.; in 1901 there are 925 policies; totalling £2092 ls. 10d. in premiums, and these figures will show that progress has been steady and good. The working expenses amounted to a ratio of £21 per cent. on the income for the year. The balance-sheet shows that after payment of the proposed dividend there would be £1 8s. invested or in cash for every £1 of paid capital, a dividend at the rate of 5 per cent. per annum, and a bonus of 2½ per cent. per annum free of income tax be paid; that £840 be placed to reserve fund, and that the balance of £576 12s. 3d. be carried forward.

Birmingham Gardeners' Association.—At the last meeting of the winter session, held on the 15th April, Mr. F. W. Sbrivell lectured on "Chemical Manures in the Kitchen Garden." An interesting discussion ensued. A certificate of merit was unanimously awarded to Mr. G. H. Thompson, of Walsall, who exhibited a capital specimen of Dendrobium Wardianum, bearing six spikes of large and well-coloured flowers, averaging two dozen to the spike. In tendering a report of the annual lending of the books in the library, the librarian enumerated recent additions to the library, such as "The Riders; or, Through Forest and Savannab;" "The Orchid Seekers;" "Forest and Forest Products" (these were presented by Professor Hillhouse, the president); "Wood and Garden," by Miss Gertrude Jekyll; "In Veronica's Garden," by Alfred Austin; "The Garden That I Love," by Alfred Austin; "Home and Garden," by Miss Gertrude Jekyll; likewise the recent binding of five volumes of "Lindenia," and five volumes of "The Orchid Review."

Meteorological Observations.—A writer in the "Bulletin of the Astronomical Society of France" concludes, after an examination of meteorological observations all over the globe, that the average annual rainfall on the continents is as follows: South America about 66 inches; Africa, 32 inches; North America about 29 inches; Europe about 29 inches; Asia about 22 inches; Australia about 21 inches.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901.										
April.										
Sunday .. 7	S. W.	deg. 51.8	deg. 49.9	deg. 60.3	deg. 42.2	Ins. 0.10	deg. 44.5	deg. 43.9	deg. 44.3	deg. 41.5
Monday.. 8	S. W.	49.9	44.9	61.1	50.1	0.02	46.8	44.9	44.4	26.0
Tuesday 9	S. S. W.	50.7	44.9	57.4	43.0	0.05	47.0	45.5	44.6	36.4
Wed'sday 10	S. S. E.	47.9	45.6	51.6	38.8	0.33	47.0	45.9	44.9	31.8
Thursday 11	S. S. E.	47.4	45.8	53.9	41.4	0.40	46.5	46.0	45.0	31.5
Friday .. 12	N. W.	43.9	40.0	48.5	38.2	0.02	46.3	46.0	45.2	31.0
Saturday 13	S. S. W.	42.8	39.6	49.1	34.8	0.18	45.2	46.0	45.5	26.5
MEANS ..		47.8	44.4	54.6	41.2	Total 1.10	46.2	45.5	44.8	32.1

Strong winds and cold rains have been the prevailing features of the past week.

The Pruning of Hardy Trees and Shrubs.

(Continued from page 219.)

MUCH that has been advised for the former section holds good in this also, but as the various subjects are grown for flowers rather than timber, the heads should be allowed to develop much earlier in life. In the majority of instances it is advisable to have at least 4 or 5 feet of clear trunk below the branches, and if 6 feet can be given finer specimens may often be obtained. The heads should always be kept well thinned, so that abundance of light and air can get to all parts of the tree. This is an item that needs careful attention with such subjects as *Cratægus*, *Pyrus*, and *Prunus*. The dwarf species of *Æsculus* should be treated in this manner, but the common Horse Chestnut and its robust red variety may be treated in a similar manner to other large-growing trees. The stronger-growing species of *Robinia* should also be induced to form large trees with a good clean trunk, rather than dwarf, mop-headed examples.

The Laburnum should receive most of its pruning while young, for it does not like being cut about much when mature. When large branches are sawn off, instead of the wound healing over a portion of the stem usually dies. In instances where flowering trees make a lot of wood at the expense of flowers root-pruning will sometimes be found necessary. This should be done by making a trench a few feet from the tree and severing cleanly all big roots.

Conifers.

If Conifers are planted in good ground suitable for their requirements they rarely want pruning; a good single lead is usually maintained without artificial aid, while the branches on the lower part of the trunk rarely attain any great dimensions, and where planted for ornament the great object is to have a perfect pyramid, retaining its branches from base to summit.

In cases, however, where climate or some other condition is not suitable for their culture, pruning is necessary; also when tops are broken by wind or other accidents. In either case the chief thing is to obtain a lead, and the best method is to cut the top clean off, shorten surrounding branches, and try for a strong break from the main stem. If one can be obtained it will be by far the best. If a terminal break cannot be obtained a side branch will have to be tied upright; this sometimes answers satisfactorily, but more often not. With young *Abies*, *Piceas*, &c., that have been grafted from side branches, it will be found necessary to cut the young plants back a time or two until a good, straight, terminal shoot is thrown out. As in other trees, dead wood should always be kept cut out. *Araucaria imbricata* is one of the few trees that should not have its branches cut off level with the trunk. If cut off half an inch away new branches may sometimes be induced to grow from the bases.

Systematic Overhauling.

At Kew a systematic overhauling of the arboretum was commenced nine years ago, and the results have been entirely satisfactory, having exceeded the hopes of the most sanguine.

A few instances will serve to show what has been done. A Turkey Oak about twenty-five years of age had six leads, the centre one being the shortest; the five outer ones were reduced and eventually removed. It is now making a fine tree with a good clean trunk, giving very little evidence of the severe pruning given. This when pruned looked one of the most naked trees imaginable. An American Oak about thirty years old had a very wide flat head, the whole tree being about 20 feet high without a lead. It was reduced in width by 16 feet, and a lead formed. It has added 10 feet to its height, and shows quite a normal development. Another Oak became so crooked 12 feet from the ground, that the head had to be taken out. It has made a fine new lead 8 feet high, and perfectly upright. A similar operation was performed on an Alder about twelve years old. That has added 12 feet to its height since. These are but a few of a great number of cases, the majority of which have turned out quite as satisfactorily. Mention may be made of a decayed portion of a stem of a *Liquidambar*. It was thoroughly cleaned, tarred, and the hole plugged up; this has now healed over.—W. DALLIMORE.

(To be concluded.)

Culture of *Oxalis cernua*.

THE very beautiful and easily grown *Oxalis*, named *O. cernua* and *O. c. fl.-pl.*, are so much neglected that one very seldom meets with them grown to anything approaching perfection. The cause may possibly lie in the fact that other plants of a later introduction to our gardens are considered more useful than these *Oxalis*. But I am of opinion that, for hanging baskets suspended from the roof of the conservatory or any cool greenhouse, they can hardly be superseded.

Their very bright lemon-yellow flowers, borne on long stalks, which hang over the sides of the baskets, can be seen to the best advantage. One peculiarity, and no doubt a drawback with these plants, is they close their flowers as soon as the sun has lowered in the horizon, and on sunless days they never open at all. They should always be started into growth in as cool a position as possible, and they will then remain in flower for a much longer period than they would if started in heat.

The compost we find suiting them best is good sandy loam two parts to one of half-decayed leaves, rubbed through a coarse sieve, and a sprinkling of sand. It is well, when potting, to place the bulbs in the baskets or pots in which they are to flower, for they dislike being disturbed at the roots. If it becomes necessary when growing them in pots to give more root room, the operation should be done carefully, or a check may be given them, and failure be the result. They should be given copious supplies of water during the growing and flowering season, for if allowed to get dry they soon fall a prey to red spider and other insect pests, which brings about an unsightly appearance to both flowers and foliage. When the plants show signs of going to rest, they should be removed to a cold frame, and water sparingly given, till the bulbs are well ripened, when it may be withheld altogether.

During the resting season they may be placed out of doors, where they will simply need protection from heavy rains. January is a good time to repot the bulbs, which should be treated somewhat similar to *Freesias*, keeping the large bulbs from the small ones. The double-flowering variety, *O. c. fl.-pl.* is not quite so free-flowering as the single, but treated in the same way they both give splendid results.—ASPIRANT.

Succulents for Bedding.

THE gardener is anxiously waiting and watching for drier and warmer weather, so that he might attempt to harden off many of those plants which, in a week or two, he hopes to place out in their summer quarters. Well, the succulent plants do not require much exposure or hardening before they can be set in the beds allocated to them; keep them dry and cool, and these long-suffering plants will remain unaltered, defiant, and always curious, if not even interesting. Personally, we think Cacti and succulent plants are of exceeding great value, and intensely interesting; perhaps not so much the *Agaves*, *Crassulas*, or *Rocheas*, but the *Opuntias* are wonderful structures, sufficient to cause us all to become deep and abstruse philosophers, if we cared to meditate on all that their peculiar organisms convey. *Mammillarias*, *Stapelias*, *Haworthias*, *Pilocereus*, and *Sempervivums* are all of them strange, and deserve considerable close study.

Within recent years there have been signs of activity amongst, and increase to, the ranks of Cacti growers and admirers of those plants. For bedding purposes, too, we see signs of their more extended use. And really they are splendid plants for massing in large beds. The secret of the successful use in this direction is to employ as great a variety as possible, in a round bed, or one with flowing curved lines. Such a bed, moreover, loses a great quality if it is not imposing. It ought to give rise to the feeling of grandeur. To attain the desired effect all the full-sized *Agaves*, and kindred plants, ought not to be massed in the centre; they ought rather to be spread out, one prominent specimen to be the nucleus around which smaller members may be grouped. Our illustration conveys a splendid idea of a well planted succulent bed and its surroundings. This bed was arranged in Abbey Park, Leicester, by Mr. John Burn, who has wonderfully improved the park during his superintendence of it. The bed is about 20 feet in diameter.

The *Agave* tribe is well represented by some good specimens of *A. americana*, *A. variegata*, and *A. Celsiana*. Dotted about are many of the *Aloes*, of which *A. Noacki*, *A. Kellocki*, *A. linguifolia*, *A. ferox*, several really good plants of *A. Taylori*, *A. densa*, *A. densiflora*, and some beautiful little plants of *A. verrucosa* form a conspicuous part.

Opuntias are very numerous, and in all shapes and sizes. *O. cylindricum* stands like a soldier on guard over a poor "old man," who is drooping his head rather near a Prickly Pear (*O. Rafinesqui*), which has many fruits; one bunch has grown on and on until some eight are hanging from one another. *Echeveria* is another genus which is in quantity; several *E. undulata* are flowering, as also *E. secunda*, *E. glauca*, *E. Peacocki*, and *agavoides*. These deserve special mention, as do some very fine *E. metallica*.

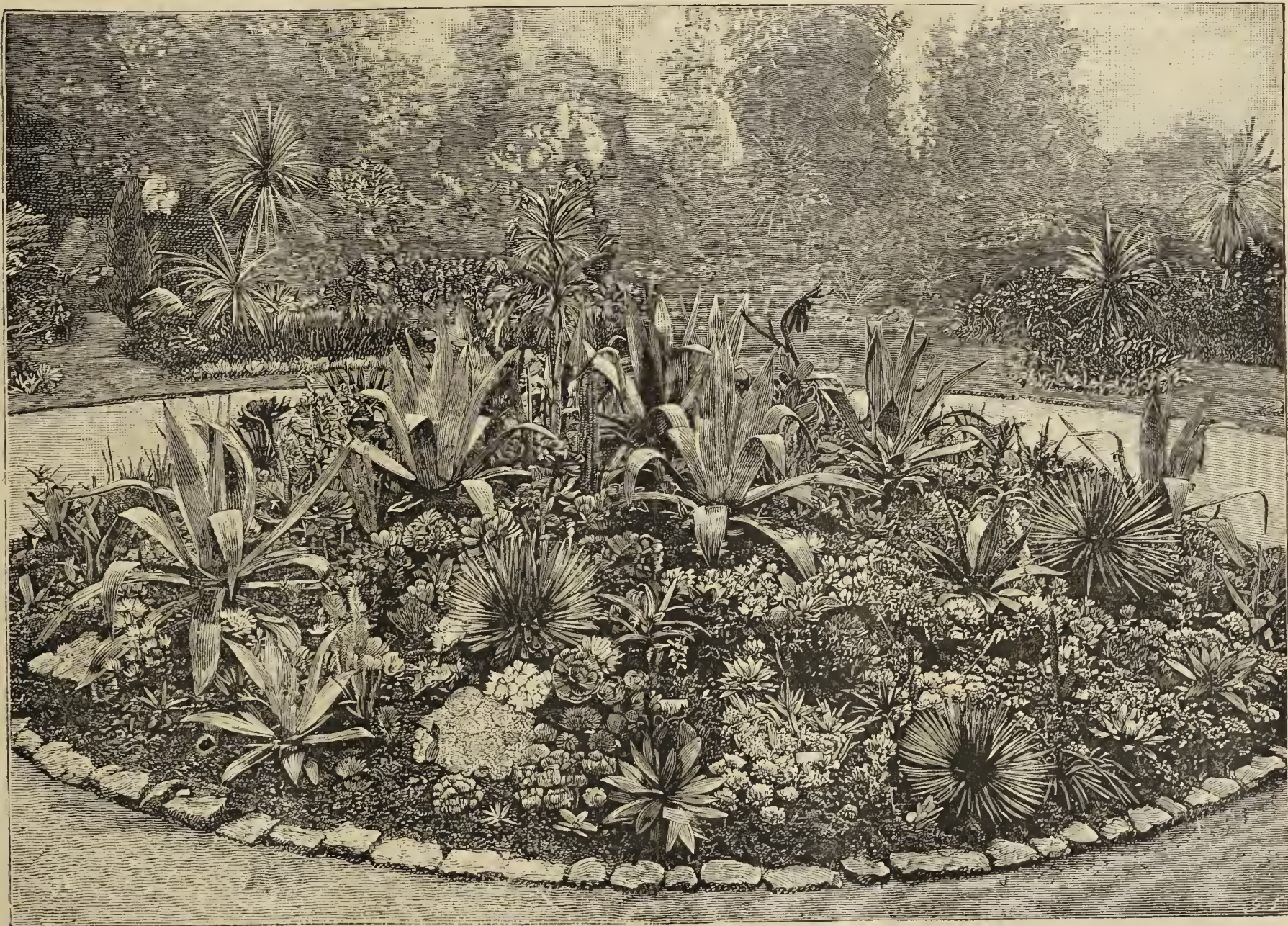
As we near the border the smaller kinds are used, such as *Mesembryanthemum*, including the pretty and curious *M. tigrinum*. *Melonocacti* seem quite at home, and several have flowered during the summer. Some good tufts of *Crassula*, including *C. lycopodioides* and that strange "buttons-on-a-string" species, *C. perfoliata*. A number of *Rochea falcata* are distributed at intervals all round the margin. On the north side (*i.e.*, the back of the bed) there are several umbels of its gorgeous scarlet blooms, and occasionally we come across a fine specimen of creeping *Cereus*. The centre is beautifully carpeted with various small growing *Saxifrages*.

Watering Vine Borders.

NUMBERS of Vines all over the country are at the present time either swelling up their buds or unfolding their first leaves, and their progress throughout the growing season will to a great extent depend upon the management of the borders in regard to watering and feeding. These are matters which require a great amount of judgment, and to be successful the cultivator must be guided by the circumstances connected with each particular case. Without doubt a great many Vines receive too much water during the early stages of growth, and it is equally certain that some do not get enough. I am afraid most of us are sometimes too much inclined to take for granted that a Vine border needs watering when the Vines are starting into growth; of course I am here referring to inside borders, as no one

front or sides of such houses, where the hot-water pipes are located, the soil frequently needs watering while the central portion of the border may be quite sodden, and for some reason or other Vine roots are usually more plentiful and active near the pipes than at any other point, which seems to point to the fact that they delight in warmth.

The stages during which Vines require the most copious supplies of water are throughout the time when the berries are swelling and ripening. In the early stages of growth the shoots are the product of "stored" sap, and the roots are comparatively inactive, more so, in fact, than during the autumn or early winter, while the leaves are falling. Notwithstanding the above facts, it is, however, an easy matter to overwater during the swelling and ripening periods. I have seen Grapes begin to shank badly after being heavily watered, and many a bad case of shanking is undoubtedly caused by keeping the borders too wet. Even where they are well drained, and the compost



A MODEL BED OF SUCCULENT PLANTS.

thinks of watering outside ones thus early in the season. When Vines are growing in narrow borders, and the soil is packed with roots, a thorough watering is invariably needed when the Vines are started, as dryness at the root under such conditions is a sure forerunner of red spider. As a rule, however, borders are far wider than is either necessary or desirable, and the enormous bulk of soil is but scantily interlaced with roots. If it then gets into a sodden condition early in the season, neither the roots nor the top growth can make really satisfactory progress.

When the borders are kept free from plants, and have been well drained, the sun and air acting upon the soil help to keep it in a sweet and mellow condition, but there are many instances in which such conditions do not prevail. During the spring months the borders are usually covered with bedding plants, the water from which keeps the soil constantly moist. Under such conditions the whole of the borders seldom require watering till the plants are removed, it is then an excellent practice to dress the surface with a little lime to dry and sweeten the soil. Early in the season, however, there are many dry positions which require a considerable amount of attention. Along the

much open, it soon becomes close in texture if roots are not working freely in it, and when once a mass of soil is destitute of roots it is a most difficult matter to get young ones to permeate it.

The only safe method to follow in regard to watering is to first ascertain the exact condition of the soil, and then use judgment in giving or withholding water. The well-known method of testing by thrusting a stick into the soil is a good one, but the "Vine border tester" sent out by Mr. Kirk should be in every garden, and if used will greatly help the cultivator to avoid mistakes in regard to watering or non-watering.

The foregoing remarks will, I trust, not lead readers to think I in any way advocate keeping Vine borders dry, for I know how important a part copious waterings play in the production of fine crops; but to secure such crops we must first obtain abundance of active roots, which can never be produced while the soil is wet and sour, especially when it gets into that condition early in the season. After abundance of foliage has been formed, and when the heat of summer comes, give water in abundance when the soil is fairly dry, and do not repeat it till a similar state of dryness prevails.—H. D.



European Forests.—Every nation in Europe has its own forests under its own supervision. Austria has over two and a half million acres; the little Duchy of Baden, about a quarter of a million; Bavaria, two millions. Denmark has a large area, France has over two and a half million acres; Sweden, Norway, and Prussia also come in. These governments plant and care for forests, and make money at it.

Developing Odour in Flowers.—An enthusiastic lover of flowers (in America) has succeeded in breeding an odoriferous race of Tulips, and he is now engaged in experiments with the Chrysanthemum, to which he expects eventually to impart the fragrance of the Rose. We can only say, in reply to an inquiry, that nothing has come to hand throwing any light on these related successes and experiments. From a theoretical point of view it seems impossible. Odour comes from the excretion of minute particles of oil. To change the odour, the character of the oil would have to be altered. When this can be done by the cultivator, we may expect turpentine from the sugar cane, and get the fragrance of the Violet from Ailanthus flowers.

Pelargonium Ardens.—This is perhaps one of the least known of the Pelargoniums, and very seldom seen, but it is a very beautiful plant. It is not a true species, but a hybrid between *P. fulgidum* and *P. lobatum*. The plant is dwarf with hairy irregularly formed leaves that spring from a stem of moderate size. As the flowers open and other spikes show this stem lengthens out, as in the Cape Pelargonium, *P. echinatum*, and this is when it is most graceful in appearance. The individual flowers are very bright scarlet with a deeper blotch on the petals; they are small, but produced several together on umbels at the top of a wiry stem, this making them excellent for use in vases or specimen glasses. The roots are tuberous, and consequently very little water is needed during the winter or resting season, but it is not wise to leave them quite dry for any length of time. A gentle warmth is desirable in early spring, and the plants soon commence to flower, continuing to do so over a long season. It is now flowering well in the gardens at Latimer House, Chesham, Lord Chesham's beautiful Buckinghamshire seat.

Jottings on Pines.—Plants started into growth early in the year are near the flowering stage, and will be benefited by an occasional sprinkling at the time the house is closed, but when the flowers open this must not be practised. The foliage being as yet tender, it will be advisable to afford a slight shading for an hour or two in the hottest part of the day for a few weeks. When the flowering is over the fruit will advance rapidly if the roots are in good condition, and plentiful supplies of liquid manure will be requisite. Attend to ventilating early in the morning, commencing when the temperature is at 80°, and closing at 85° with sun heat. Keep the atmosphere moist when the house is closed, the bottom heat steady at 80° to 90°, the night temperature 70°, and 75° by day artificially. As soon as the suckers appear remove all except one to each plant. Young plants in course of preparation for fruiting often become soft, drawn and weakly in growth, through a close moist atmosphere and high temperature. This should be carefully avoided by dispensing with fire heat as much as possible. Maintain the temperature at 60° to 65° at night, and 70° to 75° by day artificially; this is sufficient to keep the plants in steady progress. Commence ventilating at 75°, gradually increasing it with the temperature to 85°, keeping it through the day at 85°, 90°, or 95° from sun heat, with abundance of air, closing at 85°, but not so as to greatly raise the temperature. Sprinkle the paths and walls at closing time, and syringe the plants lightly about twice a week. Plants swelling their fruit are assisted by judicious applications of liquid manure, to be withheld when ripening commences. Stake the fruit to keep it in an erect position. When the suckers of fruiting plants become large enough screw out the hearts of those not required for stock; one, or two at most, should be retained on a plant. The temperature of fruiting houses ought to range from 70° to 75° at night, and 80° to 95° by day. As the fruit ripens the plants may be removed to a cooler house, and the fruit will then keep sound for a lengthened period, longer, indeed, at this time of year than any other.—PRACTICE.

Asparagus plumosus.—Seeds of *Asparagus plumosus nanus* may be sown at any time of the year, but April is the natural time. Bottom heat is of great advantage. If the seeds are soaked four days and given good bottom heat, say 70°, they will sprout in about twenty-five days, and the seedlings can be transplanted twenty-five days later.

Paris Green.—For general purposes 1 lb. of the poison to 100 lbs. of the diluting material is used. If a small quantity is needed, mix it at the rate of 1 oz. of Paris green to 6 lbs. of plaster, lime, or flour. It should then be thoroughly stirred, and shook over the plant early in the morning when the dew is on. This can be accomplished by placing the material in an old bag, or an old vessel, which has previously been perforated. The dry method is usually more satisfactory than the wet method, especially where the plants are small, but when the plants begin to form continuous rows the wet method is preferable, being less expensive and more easily applied. In preparing the Paris green for use, it is desirable to use about 1 lb. of the poison in about 140 to 160 gallons of water. It is desirable, in most instances, where the poison is mixed in water, to add a small quantity of good stone lime, which has been previously slaked, usually an amount equal to the weight of the Paris green used. This will help to hold the Paris green in suspension. The solution should be thoroughly stirred while being sprayed. It is at times advisable to use the Paris green in Bordeaux mixture; in this instance, 4 ozs. of the Paris green are used in each barrel containing 40 or 50 gallons of Bordeaux, and is sprayed over the plants.

Kerria japonica.—The double-flowered form of the above plant is one of the oldest garden shrubs, and one commonly met with in cottage gardens in various parts of the country. The typical plant, however, is little known and rarely seen, though it is a lovely thing when in flower. The double variety was introduced about 200 years ago, but not until long afterwards was anything known of the type. About ten years ago it was represented at Kew by one or two plants, which are said to have been obtained from cuttings of a variety with variegated foliage, one branch of which had reverted to the type. Now at Kew several beds are to be seen, and a dozen or more plants have been forced for the Temperate House. It does not grow so strong as the double form, and makes a denser bush. Three to four feet appears to be its maximum height, with a similar diameter. If the plants are kept well thinned after flowering the branches assume a graceful pose, and when covered with newly developed foliage, and thickly studded with golden blossoms an inch across, they look charming. For decorative purposes it is distinctly superior to either its double-flowered or variegated-leaved varieties. Its cultivation is of the simplest; rooting readily from cuttings of young wood, and growing well in any ordinary garden soil. For forcing it is a useful plant. It can be grown and flowered three successive years in the same pots, forces easily, and remains in good condition for at least a month.—W. D.

"The Pleasures of Life."—Gardening was certainly the original primitive condition of man. If we believe the Scriptures, we must allow that God esteemed the life of man in a garden the happiest he could give him, or he would not have placed Adam in the garden of Eden. And to the present day, when a man tires of the worries and cares of a business life, and desires rest for soul and body, he naturally retires to a garden and finds pleasure there which he may seek in vain elsewhere. And if any fail to find profit as well as pleasure in tilling the soil it is certainly because he fails to "keep up with the procession," or to advance with the advancement of the present day or age. Never before in the history of the world were there so many to eat in proportion to those who gather food from the earth as to-day; and never did the earth yield so much in proportion to the work spent upon it. Never before did it cost so little labour to earn food, and never did the great mass of the eating population want so much food. Never before were these eaters so particular as to what they eat, or so ready to pay a long price for the best to be had. So it seems idle to say that it does not pay to produce fruits, vegetables, and flowers. Perhaps it does not pay you, but it pays somebody, and if not you, did it ever occur to you that there must be something the matter with you? We are tired of the people who wail about the unprofitable farms and gardens. Let them go off to the cities and stay there. They are not worthy to live in God's country, and deserve to be turned out with a curse. We know that seed time and harvest shall never fail. Gardening is growing safer and surer. It is becoming more scientific, more exact, more like a manufacture, and therefore more profitable.—("Massachusetts Plowman.")



Royal Horticultural Society of Ireland.

Who Was the Exhibitor?

REFERRING to "W. R. Raillem's" query on page 307, regarding the ownership of the flowers exhibited by me at the last winter show of the R.H.S. of Ireland, the question occurs is, How could a person reading the correspondence fail to understand that the flowers were the property of my employer? under whose authority I exhibited them; and had it been otherwise this correspondence would not have taken place. The question in dispute is on quite a different issue—viz., Who was the exhibitor, and had the official representatives any authority under the standing rules of the society to treat me in the manner they did? The rights and privileges of members of the society are set forth in the printed rules. [Our correspondent here quoted the full text of the rules that bear on the matter under dispute.—ED.] It must have been considered that I was exhibiting in a surreptitious manner, and without the knowledge and consent of my employer. Had I not been a member entrance fees would require to have been paid, and the fact of the exhibits being accepted without fees is in itself an acknowledgement that I was the *bonâ fide* exhibitor. When the secretary applied to my employer for his authority for my action in returning the cheque, he refused to have anything whatever to do with it. I hope the above explanations will clearly justify my action in the matter.—PETER BROCK, *The Gardens, Glenmor, Drogheda.*

Pear Bergamotte Esperen.

THIS late Pear was recommended for an award of merit by the Fruit and Vegetable Committee of the Royal Horticultural Society on April 9th, and the Council at a subsequent meeting did not confirm the action of its Committee, and the award therefore fell to the ground. It seems curious, to say the least, that the Council should bring together a body of the finest experts in the country to adjudicate upon exhibits, and then should throw out its recommendations. In what position would the Council be if the Committee, smarting beneath this vote of censure, should resign? It is certain others of similar calibre could not be found to fill the places with the same skill and knowledge. The Council will, of course, shield itself behind the regulation that gives it the power to confirm or disallow awards. But whoever thought the latter portion, at any rate, was more than a figure of speech? Pear Bergamotte Esperen is one of the finest late Pears we have; it is praised in the "Fruit Manual" of the late Dr. Hogg (than whom there were few, if any, better judges), and it is in the catalogues of the leading fruit nurserymen with scarcely an exception. The fruit, it is said, does not ripen, and here comes the benefit of the expert knowledge of the members of the Fruit Committee, who understand that, like other late Pears, it will ripen if treated to a little more heat than is allowed or required, for before Christmas varieties. Pear Bergamotte Esperen is not a very superior seedling or a rare object, but it is one of those things "of great excellence which have been hitherto overlooked or ignored," and to such the several Committees are empowered to make awards. I think the Council of the Royal Horticultural Society has established a dangerous precedent by its action in this matter, and it would be as well for the decision to be reconsidered, and the award of merit recommended by the Fruit Committee to Pear Bergamotte Esperen be confirmed.—F. R. H. S.

Scarcity of Journeymen Gardeners.

I QUITE agree with your correspondents in reference to the above question. The hours, compared to other trades, are too long. I was recently asked what time should a man in the garden begin to be paid overtime for his work. You do not find a mechanic work but a very short time before it is overtime; and take Sundays, why should not men be paid for their Sunday duty? I know this is done in some places, but it is time it became general. I hope to live to see the day when all gardens will close at one o'clock on Saturday. Of course, it is necessary for someone to take charge during the afternoon; but I have found the principle work well now for some time, and I feel sure if it was to become more general the work would be done quite as well, and the men would appreciate the afternoon off. I have something to do with lads, and I find a growing disinclination to follow up the garden work or to learn milking and butter making, and care of stock; if they do, the chances are they very soon leave it, and go into either the Navy or Army, or at once try something where the pay is better. I see no possible chance, or good either, in gardeners thinking of forming

of unions to raise the wages standard. I suppose we must wait until employers insist upon having men who have been through the mill, and pay them better. A lady remarked to me a short time ago how difficult it was to get what she termed a really good man; but no wonder, at the price she was prepared to pay. One is always glad to get hold of "our Journal," and we certainly do ourselves no harm, but, in my opinion, good, in discussing these and other kindred subjects connected with the craft.—A. J. BROWN, *Chertsey.*

HAVING been interested in the discussions by "W. L.," and "One Who Has Been Through the Mill," I beg to offer the latter my warmest congratulations for his most able article under the above heading on page 307. I am of the same opinion as he regarding the ridiculously low wages now offered to men, and this accounts for the pronounced scarcity. I was disgusted, and not a little ashamed, when a few weeks ago a friend of mine called my attention to an advertisement in a first-class gardening paper. It ran thus:—"Wanted, a foreman inside; must be good workman; well up in Orchids, house and table decorations, &c.; not under twenty-five; wages 18s. and bothy." Are not such terms as these an insult to any intelligent young gardener? Such advertisements are not at all unusual. What I ask is this: Cannot the young fellows do something to improve their lot? I am pleased to see this subject brought forward in these columns, and trust someone will come to the front with a good suggestion, which in due time, when put into practice, will help us out of this abominable state of affairs which at present makes us the laughing stock of the working classes.—G. H. C.

Late Culinary Apples.

WITH regard to the two doughty champions, Messrs. Pearson and "Southwellite," anent my really inadvertent misrecognition of the varieties of Apples so strongly advocated by them, possibly it will "prove a blessing in disguise" in the way of drawing further attention to, and I hope extended cultivation of, the excellent kinds so vigorously championed by them. Especially does this apply to Bramley's Seedling, and it may soothe the injured feelings of my facetious castigator No. 2, that at the present moment, whilst wielding the quill, I have a fine specimen reposing on the writing desk of the "finest Apple on earth" just brought forth from my cool cellar, and its shapely form and highly coloured roseate cheek appear to upbraid the sinner for his "slip of memory." By its side also is an equally fine and well kept specimen of the Striped Norfolk Beefing—which by the way I wonder was not also mentioned by either of my respected critics—the latter harking from Herefordshire, and the other—"cry it not in Gath"—from the vicinity of Southwell itself, and was presented to me about two months ago by a native young gardener of the district in question, and until lately a resident here.

Last season also he presented me with a few still finer specimens of the same variety from the same source, and it may gratify both of my critics to learn that at one of the Birmingham Gardeners' Mutual Improvement Association meetings I took occasion to exhibit and draw attention to the excellence of the "finest Apple on earth," also including the merits of about a dozen other worthy varieties, and not excluding the would-be maligned old Northern Greening; the new Northern Greening was included in the list.

Now these admissions on my part would seem to render my advocacy of the old kinds, and omission of equally good and newer ones, somewhat inexplicable. The fact is, at the time of penning those few notes to accompany the photographic illustration of a prolific young tree of Lane's Prince Albert, the old Northern Greening was especially reminiscent owing to its highly serviceable attributes, as depicted in the notes in question, and, parenthetically, while not presuming to question the experience and authority of castigator number 1, I opine he must be labouring under a misapprehension as to my estimate of both the Northern Greening and Dumelow's Seedling Apples. Of the former I am thoroughly certain that it was the true variety, and that it proved to be a vigorous grower, nearly equalling such as Blenheim Pippin and Hanwell Souring, grown in the deep and holding clayey soil of the two orchard gardens I was practically acquainted with from twenty to fifty years ago, and the Northern Greening (familiarily called "Johns" or "Jacks") was even esteemed as a first-rate culinary Apple, amongst several others, and all of which often rendered me potent service on the exhibition table at some of the leading shows in the country, while occasionally specially grown fruits of the Northern Greening assisted in securing honours; but, like other extra prolific kinds of Apples and other fruits, severe thinnings are needed if large size be a consideration.

Mr. Pearson quotes Dr. Hogg's "Fruit Manual" regarding the nomenclature of the Northern Greening, and here I may be excused recording the fact of my having been requested by the late worthy Doctor to assist him, with Mr. Killick of Kent, in judging the large array of Apples and Pears at the Fruit Conference held at Hereford in 1879, I having been a non-competitive exhibitor. Cider and perry also came under our adjudication. Altogether it was an instructive and highly interesting task for me, apart from the appreciated honour thus conferred, and rendered further gratifying by the esteemed present from the Doctor a short time afterwards of a copy of the fourth edition

of the "Fruit Manual," presented "In remembrance of the pleasant meeting I had with you at Hereford," &c., &c.

The new Northern Greening is not included in that edition; but *apropos* of the old variety, curiously to relate, it was one of the varieties the trio of judges particularly remarked upon, as a very fine dish of it came under their notice at the show, and both of my colleagues agreed that no other variety could excel its cooking properties. I also have a vivid recollection of the Doctor's exclamation, "Here's a grand dish of John Apple." I venture further, at the risk of being too prolix, to quote the description of the Apple in question from the edition mentioned: "Fruit, medium sized; . . . flesh, greenish white, tender, crisp, and very juicy, with a brisk and somewhat vinous flavour. The tree is a very strong and vigorous grower, attaining the largest size, and is an abundant bearer." And were it necessary to further my own description and estimate of the Northern Greening, permit me to quote a few abbreviations from Thompson's "Gardener's Assistant." "John Apple of some. Shoots long and vigorous; leaves large, and oval or ovate; fruits middle size, or rather large; stalk short, frequently inserted obliquely, the base of the fruit forming a projecting curve on one side. The tree is vigorous, hardy, and a good bearer."

Thus, altogether, I fail to agree with Mr. Pearson's *ipse dixit* relative either to the shape of the fruit or the constitution of the tree, and the probability is, that his own experience must be with trees of the Northern Greening, grafted upon unsuitable stocks, or growing in too light a soil, unless, indeed, that he refers to a spurious variety. Neither also am I quite clear as to his assumption that I am in error regarding my estimate and description of Dumelow's Seedling or Wellington—the latter cognomen by which the variety is and has been familiarly known in the London markets ever since its introduction to commerce in 1815, and commemorative of the battle of Waterloo—and in the last edition of the "Fruit Manual" the primary name is that of Wellington.

Well, Mr. Editor, after the foregoing lengthened, and I trust, so far convincing rejoinder to my respected censors, they will pardon my comparative laudation of the Apples in question, and not with the view of depreciating other equally good and large kinds, even at the risk of being considered too discriminating when remarking that if the "best Apple on earth" possesses one defect, it is its deep though shapely eye—as once remarked to me by a well-known Birmingham nurseryman, a defect not shared by either Lane's Prince Albert or Northern Greening.

As Mr. Pearson so freely appended his own name and address, it is a duty incumbent upon me to follow suit, and subscribe as—
WILLIAM GARDINER, Harborne, Birmingham.

Certificated Plants.—No. 9.

The Gaillardia.

BOTH the annual and perennial types have undergone great improvement of late years, and the naming of distinct varieties has become necessary. *G. picta* Lorenzana, with its double flowers full of quilled florets, certificated in 1882, marked the introduction of a distinctly new type, followed by *G. splendidissima plenissima*. Six years later modern tastes gave the preference to the large and striking single varieties.

Galanthus or Snowdrop.

The present generation have probably forgotten the labours of Mr. Melville in improving and adding to the varieties of the common Snowdrop. He sent a collection of seedlings to the Chiswick Gardens, and they showed a succession of blooms; one or two displayed remarkable precocity, and there were quite late flowered forms. One named Melvillei, awarded a certificate in 1879, hands the name of the raiser down to posterity. That giant form, *G. Elwesi*, is probably the finest of the group. Varieties of it have appeared, but their claim to variation seems to be based on a slender foundation.

The Gardenia.

The Gardenia, once so popular, is now mainly grown for marketing in a cut state. The gardeners of 1850 probably little dreamed the day would come when a scented Gardenia—like the Camellia, once the gentleman's buttonhole *par excellence*—would be hawked in the streets of London at one penny per bloom, and a good bloom too!

Gilia rosea

Is the once popular *Leptosiphon rosaceus*, which received a certificate of merit as far back as 1870. It was a lovely annual, needing to be sown on a warm border in a somewhat light sandy soil. It doubtless came out of a strain of French hybrids of dwarf growth, which had originated some time previously.

The Hæmanthus.

Up to the present year the last award made by the Floral Committee to a Hæmanthus was in 1894, when M. Linden, Brussels, exhibited *H. Lindeni*, which does not appear to be included as a species.

H. cinnabarinus was the first to obtain an award when shown by the late Mr. C. Pilcher in 1869; it had been imported from West Africa some fourteen years previously. This was followed by *H. Cooperi* in 1874; *H. rupestris* and *H. Kalbreyeri* in 1878, and *H. Lindeni* as above stated. The singularly fine forms from the Congo, recently exhibited at the Drill Hall by M. Lucien Linden, seem to accentuate the fact that these bulbous plants vary considerably in a state of nature. The handsome pendulous form of the heads of bloom of the new forms add to their attractiveness. They require stove or warm greenhouse culture.

Helianthus.

The perennial Sunflowers, and especially the group included under *H. multiflorus*, which is now comprehended under the head of *H. decapetalus*. The Floral Committee has been somewhat chary in granting awards to new varieties, for the obvious reason that they have increased somewhat rapidly of late years, and show a certain sameness of character. The last to receive an award from the Floral Committee was Wantage Star in 1896, as set forth in the published list, but it does not appear to have found its way into plant lists under this name. A variety named *H. G. Moon* received an award of merit last year, and is one of the finest; *lætiflorus*, *Bouquet d'Or*, *Meteore*, *Queen Victoria*, and *Soleil d'Or*, among others, are all very fine border plants. The old single and double annual Sunflowers still claim attention, on the ground of their showy character; a fine double variety, under the name of Stoke Park Favourite, received an award of merit in 1895. The fine and showy form of *Harpalum rigidum*, named Miss Mellish, might be appropriately included with *Helianthus*. It is a stately border plant, throwing very large and striking yellow blossoms with a dark disc, on long stems, which renders it suitable for cutting purposes. It propagates itself very freely by means of its roots.

The Hellebores.

The varieties of *Helleborus niger*, and also such as have been obtained from *H. colchicus*, *H. olympicus*, *H. orientalis*, and *H. viridis*, have so greatly increased during the past few years that the Floral Committee have come to be very sparing in making awards. *H. niger* give us a group of Christmas Roses, that known as the Bath Christmas Rose is regarded as a great improvement upon the old white for general garden purposes. The other species named furnish the Lenten Roses, of course later in blooming, and showing considerable range of colours. Other species, or sub-species, have been utilised to add to collections, and it would not be difficult to make up a list of over one hundred distinct varieties. They are of great value for flowering in pots in the early part of the year, and new varieties are frequently putting in appearance in their season.

Hemerocallis.

Under this generic name there is furnished a group of showy, bold, and striking hardy perennials, one of which, *H. citrula flore-pleno*, received a certificate of merit in 1860, followed by *H. rubra variegata* in 1862, *picta* in 1868, and then such newer forms as *H. aurantiaca major*, *H. Middendorffiana*, &c. Day Lilies is an appropriate designation for the group, as they are highly ornamental flowering plants, bold and striking in the border.

The Hippeastrum.

Dean Herbert, in his "Preliminary Treatise," sets forth ten features or particulars by which *Hippeastrum* is divided from the Linnæan *Amaryllis Bella Donna*. The very different nature of the seeds appeared to be a dominating feature in the differentiation. In the list of certificated plants all the forms which have received awards during the past forty years as *Amaryllis* are now classed as *Hippeastrum*, and there is a formidable list of them. The first hybrid *Hippeastrum*—so we learn from Dean Herbert—was *H. Johnsoni*, said by Mr. F. W. Burbidge to have been named after its raiser, a nurseryman who fertilised *H. vittatum* with *H. regium*. This was employed early in the century to cross with other forms in cultivation, but the great movement in the direction of advance commenced with the introduction of *H. pardinum* in 1867, and *H. Leopoldi* in 1869, both of which received first-class certificates of merit from the Floral Committee. Messrs. Veitch & Sons have accomplished a remarkable work in improving this magnificent flower, the great majority of the awards made to varieties during the past thirty years falling to the Chelsea firm. Of late years Messrs. R. P. Ker & Co. of Liverpool; Messrs. B. S. Williams & Son, Holloway; Mr. Henry Perkins, gardener to the Hon. W. F. D. Smith, Henley-on-Thames; and Mr. Chapman, gardener to Capt. Holford, Westonbirt, have all contributed advanced varieties obtained from seeds. This year both Capt. Holford and Messrs. Veitch & Sons have exhibited and received awards for varieties that seem, from their size, form, substance, and colour, to reach perfection, only that the possibilities of the *Hippeastrum* are so great that the ideal flower increases in beauty as our standard of perfection is reached, only that the advance is made much more slowly.—R. DEAN, V.M.H.

Violets and Violet Culture.

THERE are a few flowers which will probably command undying and almost universal popularity. The number is very limited, but the claims of the Violet to a place amongst the favoured few are irresistible. There are Violets and Violets. Millions of bunches, almost crushed out of recognition, and utterly innocent of any pretensions to fragrance, find a ready sale. But there are better representatives of the species, and if the best sorts are selected and these varieties are thoroughly well grown, blooms will be produced without any artificial heat which will safely bear individual comparison with the choicest productions of the stove or the Orchid house. The three best single Violets are unquestionably La France, Luxonne, and Prince-s of Wales. In merit these probably should stand in the order given. La France has the largest blooms and the most intense colour; it is compact in habit, and generous in production. Luxonne is an immense Violet of lovely form, and is a variety which may be trusted to give a good autumn and winter supply of blooms; it is more rambling in habit, and makes almost coarse foliage. It succeeds with many who find La France somewhat difficult. Princess of Wales is too well known to call for description here; it is identical with the German Violet Kaiser Wilhelm.

Other useful single Violets are Admiral Avellan, with its reddish purple blossoms, which put on a wonderful brilliance in the spring months; White-Czar, which is, so far, the best representative of its colour; and California, which is large and hardy, and an immense cropper. Another sweet single Violet rarely seen, but which has a great future, is Princess de Sumente, illustrated herewith. It is an Italian production, with a most exquisite fragrance. The flowers are of perfect form, the ground colour of each petal is white with blue shadings. A strong plant will bear a multitude of blossoms which open almost simultaneously, and it is said to force well. I hope to have more to say respecting it in the future.

Other interesting single Violets are sulphurea, or the Khaki-coloured Violet; St. Helena, which produces quantities of sky blue flowers during the sharpest weather; and semperflorens, which should surely be also called multiflora. The small pale purple, but sweetly scented blossoms are thrown up positively by the thousand, and it commences to flower shortly after midsummer, continuing with little interruption till the following May.

In double Violets there are at least six first-class sorts. It is impossible to do otherwise than give old Marie Louise the place of honour. The intense perplish-blue, with a pure white base to each petal, touched with "a little fire" in the springtime, coupled with its sweet and lasting perfume, make it indeed a thing of beauty. This variety has a sound constitution, is very free, and if well grown will provide its blossoms with excellent footstalks.

All the foregoing remarks apply with equal force to the American double, Mrs. J. J. Astor, except that the colour of this variety is pinkish purple. This sort has a good claim to the second place amongst the doubles. Coolcronan, which is probably the largest of all the double Violets, is clear deep sky blue in colour, and is free flowering. It is probably a superior Lady Hume Campbell, and is a welcome addition to the Parmas. Comte de Brazza, or Swanley White, is considered by many gardeners as hopelessly difficult to grow. If one-quarter the time which is ungrudgingly devoted to the Chrysanthemum could be spared in the cultivation of this superb variety, the results would amaze and delight the cultivator. It is the best of the double whites, and the supply will perhaps never come up to the demand for bloom. The deep purple doubles are very pretty, but are short in stem, almost scentless, and somewhat difficult of culture. I

shall be glad to give a few hints on Violet growing next week if the editor will allow.—JAMES C. HOUSE.

[Only a few years ago the good varieties of Violets could be numbered by the fingers on one hand. Now, however, a round score might easily be selected. Amongst English growers, Messrs. Isaac House & Son, Westbury-on-Trym, Bristol, have done, and are doing, splendid service by their endeavours to further the culture of the best sorts of Violets. The two fine varieties we illustrate were recently shown by them at a recent meeting in the Drill Hall. Our readers will doubtless be pleased to have further cultural hints from Mr. J. C. House.—ED.]

Vines for Planting and Forcing.

(Concluded from p. 298.)

Treatment After Potting.

PLACE the young Vines after potting at the sides of a pit or low house, with the pots as near the base of the roof as is practicable, and

train the canes to a trellis about a foot from the glass, otherwise train the Vines upright from the stage or floor to the roof, allowing such distance between them as to expose every leaf down to the base to the sun's influence. The oblique training secures fruiting buds nearly the entire length of the cane, while the vertical training results in strong upper buds and weak lower ones. Secure the canes loosely to the trellis or stakes as they advance, stopping the laterals and sub-laterals to one leaf, and removing the tendrils. The leader should be pinched at 6 to 8 or 9 feet, according to the vigour and length of cane required.

A temperature of 65° at night, 70° to 75° by day, advancing from sun heat to 80° or 85°, and rising to 90° or 95° after closing, is suitable. Admit a little air at 70°, allow a free circulation over 75°, yet do not lower the temperature from sun heat through the day below 80°. When the growth is complete admit air freely day and night. After the Vines have made their full growth and may not be ripening kindly, keep the house rather warm by day and open the ventilators fully at night.

Watering.

In respect of watering, the foliage must never flag through lack of water at the roots, but the soil ought to be sufficiently dry to take water freely before applying any, then afford a supply sufficient to pass quite through to the drainage. A rather dry medium, however, is better than a sodden condition of the soil, extremes either way being very pernicious. Liquid manure may be supplied after the pots become fully

occupied with roots, never using it when the soil is dry, but first moistening it moderately with water. An occasional syringing will free the foliage from dust, and regular syringing in the afternoon will remove signs of red spider. A sufficiently moist atmosphere will otherwise be secured by damping the house in the morning, at closing time, and in the evening.

By August the canes will be turning brown, and the buds prominent, then give more air and lessen the watering, but the leaves must not flag through want of water. After the wood becomes thoroughly firm, and the leaves advanced towards maturity, place the Vines outdoors, standing the pots on a board or slates at the foot of a south wall or fence, and secure the canes to the surface. Afford water only to prevent the foliage becoming limp, and during wet weather place some waterproof material so as to throw the rain from the pots' surface.

Pruning.

Cut the laterals to one joint, and in the course of a few days, there not being any indications of starting in the buds, and the main leaves maturing, prune them close to the cane, but do this without injuring the main leaves. When these fall, shorten the cane to the first plump bud below the point of stopping the leader, or to the length required. It is advisable to dress all the cuts with best French polish or patent knotting,



NEW VIOLETS :

V. SULPHUREA (TOPMOST) ; V. PRINCESS DE SUMENTE (BELOW).

and place the Vines in a cool house, from which frost is only just or barely excluded. The Vines for early forcing should be pruned and rested six weeks before they are started by placing in heat. Later Vines should be continued under glass with abundance of air, watering only to keep the foliage healthy, and as soon as the leaves show signs of maturing shorten the laterals gradually, and in the course of a week after the leaves fall shorten the canes to plump matured buds. These canes, if sufficiently strong and properly matured, will be suitable for starting at the new year to ripen Grapes in May. The Vines need not be placed outdoors, though some growers stand them outdoors to harden the wood, protecting the pots with dry material, but they are better taken under cover before the setting-in of severe weather.

Concluding Notes.

Such is the usual practice of raising Vines from eyes for planting, and also in preparing canes for fruiting in pots. Sometimes extra strong canes are produced from cut-backs by shifting them a time or two more than is the case for those required for early forcing, the Vines being transferred from 7 to 9-inch, from this to 11 or 12-inch, and from these to 13 or 14-inch, or even larger sized pots. The Vines thus grown ripen the canes in autumn and afford fine Grapes the following season, whether in moderately heated structures or in cool houses, according to variety. Such Vines are also excellent for bearing between newly planted Vines in new vineries, and if not overcropped they may be fruited for several years, though it is usual to fruit them to their fullest capacity consistent with good colour and finish in the Grapes, and then throw them away after fruiting in the first year.—GROWER.

Societies.

Royal Horticultural—The New Gardens.

The notice given in last week's Journal, calling a special general meeting of the Fellows of the Royal Horticultural Society for April 23rd, to consider and, if approved, adopt the proposal of the Council to purchase land on behalf of the Society for the purpose of its new gardens, brings the Fellows face to face with one of the most important issues in the history of the Society, upon which, with your permission, I should like to offer a few comments.

In the first place, it will be seen that whereas in the annual report, the adoption of which was proposed by the President on February 13th, 1900, the Council recommended the purchase of a site (Limpsfield), *as the most suitable means of celebrating the Centenary of the Society*, in the present notice no reference is made to the Centenary, the Council merely proposing to purchase 48 acres of land at South Darenth "for the purpose of its new gardens." It is most important, therefore, to ascertain whether the Council still consider the formation of new gardens to be the best means of celebrating the Centenary, and whether the Fellows are also of the same opinion.

If the site now recommended by the Council prove to be a suitable one for the formation of a garden, which shall in all respects be worthy of the Society, and where gardening in all its branches can be carried out in the highest possible degree of perfection; and if the Council are assured that they already possess, or can raise, not only sufficient capital to furnish and equip such a garden suitably, but to maintain it at the annual cost which would be necessary, no doubt at least treble that which Chiswick now costs (about £1400 per annum), there may be no special reason why the scheme should not be carried out, if the Fellows generally consider this to be the best means of celebrating the Centenary.

But whatever the feeling of the Council and Fellows may have been fourteen months ago, there can be little doubt that only a small minority of the Fellows now consider the formation of such a garden to be the best means of commemorating the Centenary of the Society. My reasons for so thinking are:—

1, We have constantly been reminded that the Society was formed with the distinct object and purpose of "promoting horticulture," and the Fellows have to decide whether a garden in the South of England, over twenty miles from London, however well appointed and managed, is the best means at their disposal for promoting the horticulture of Great Britain. It is true that with an ideal garden, where the best methods of forcing fruits, flowers, and vegetables of all kinds are carried out, in addition to outdoor operations, a certain number of students might be trained to become efficient gardeners; but it is at least open to question whether such a training would be superior or even equal to that which the same class of students can already obtain in the first-class private establishments of this country. It is important, moreover, to know whether the gardens, if once formed, would be utilised principally by those aspiring to become *bonâ fide* gardeners, or whether they would principally form a training ground for the comparatively few men who are required to assist the neighbouring County Councils in providing courses of lectures during the winter months.

In the case of the Limpsfield site, there was certainly an idea that the gardens might be quite as valuable to the County Councils as to the

Fellows of the Society itself. However this may be, we have to compare the possible influence upon horticulture which such a garden might have, visited as it would be annually by scarcely one in 300 Fellows, with the very definite impetus to horticulture of every description, which the opening of a suitable horticultural building in London would afford. It is quite true that Fellows living at great distances from the metropolis are not often able to attend the exhibitions, but this objection applies with far greater force to a garden some twenty miles south of London. In proportion as facilities are given for exhibiting such high-class products of horticulture as are seen at the Drill Hall, so would the horticulture of Great Britain be distinctly promoted and advanced.

2, Because the more the idea of celebrating the Centenary by the formation of a new garden is considered and carefully examined, the more evident has it become that only an extremely small proportion of the Fellows generally would benefit in any degree whatever by such a garden, apart from the interest which might attach to reports of experiments published in the Journal. Such reports would, of course, possess [a] certain value, but this would depend entirely upon the experimental work attempted and carried out in the new garden. From the work done at Chiswick during the last twenty years, we must not, however, be too sanguine as to the result of similar operations elsewhere. It is not unreasonable to ask that in proposing the best means of celebrating the Centenary, the Council should make it perfectly clear that the interests of the greatest possible number of Fellows will be considered.

3, Because during the last fourteen months the Fellows have had further opportunities of carefully considering the financial aspect of the question, and very many—I believe a great majority—are not prepared to sanction so great an annual expenditure as would be necessary to maintain in a state of proper efficiency any gardens worthy of our national horticultural society, without evidence that the Society has the means at its disposal. It may quite reasonably be supposed that the annual cost would be £4000, or at least three times that of Chiswick.

Whatever scheme is ultimately decided upon as the best for celebrating the Centenary of the Royal Horticultural Society, a large sum of money must be raised, and therefore it would obviously be desirable that the scheme be one which will commend itself to the greatest possible number of Fellows, and I venture to think that the establishment of a permanent home for the Society, with a suitable hall for exhibition purposes, committee rooms for the various committees, whose work is so important to the Society, and which is at present carried out with so many discomforts; and also a lecture hall for the fortnightly lectures, and in which the Lindley Library might be housed, is one which would have the hearty sympathy of an immense majority of the Fellows. The sum of money now annually spent on Chiswick would be more than sufficient to pay the interest on any loan that might be required for the acquisition of the necessary site and cost of building.—ARTHUR W. SUTTON.

P.S.—Since writing the above letter, I have, by the courtesy of Mr. Wilks, had an opportunity of visiting and examining the proposed site near Farningham Road, in company with Mr. Wright, the superintendent of the Chiswick Gardens.

There is no doubt that, so far as the soil is concerned and the approach to the site, it is decidedly preferable to that at Limpsfield. Water and manure, too, are easily obtainable. This is, however, almost all that can be said in its favour. The best trains take an hour to cover the twenty miles from London, after which there is a walk of about half an hour, and very little, if any, opportunity of getting such refreshments as Fellows who spent a day or half a day in the gardens would need. The site is a very open one, and as there are no trees upon it there is, of course, no shelter, except on the south-west side; neither do buildings of any kind at present exist there. At the same time, as the soil is undoubtedly good, there would be no insuperable difficulty in forming the garden if a great majority of the Fellows wished to celebrate the Centenary in such a manner, and at such a distance from London.

It seems strange that it should not be possible to obtain 15 to 20 acres in the Feltham neighbourhood, or other districts where market gardeners, seedsmen, and nurserymen have already found the soil and situation suitable for horticultural operations. The cost per acre would undoubtedly be greater, but then a much smaller area than 48 acres would suffice for all the necessary purposes of a garden.—A. W. S.

Scientific Committee, April 9th.

PRESENT: Dr. M. T. Masters (in the chair); Messrs. Honston, Odell, Chapman, O'Brien, Drnery, Saunders, Hudson, Bowles, Veitch, Gordon, Dr. Rendle, Prof. Boulger, and Rev. G. Henslow, Hon. Sec.

Pseudo-fasciation of Ash.—A specimen was exhibited of a diseased Ash bough by Mr. Odell, who described it as follows:—"This is a diseased condition of the inflorescence resulting in the fusion of the pedicels into a thick and shapeless mass, which hardens into quite a woody structure. These sub-fasciated clusters are said by Professor Kerner, and also by Mr. A. Murray, F.L.S., to be due to the attacks of a minute Phytophthora. The accompanying specimens were obtained from

trees growing by the river Ouse at Olney in North Bucks, where I recently observed that this diseased condition was common to the Ash trees growing along the valley of the Ouse; in some cases only slightly, in others the trees were thickly covered with the 'fasciated' clusters. It did not appear that the trees were in any way stunted or affected by the disease; but as the result is to prevent the development of seed, it may be that the vegetative processes are stimulated by the partial and abnormal suppression of the reproductive functions."

Masdevallia, sp.—Mr. Chapman brought the following species, upon which Mr. Rendle reports as follows:—*Masdevallia Lowi*, Rolfe, in "Gardeners' Chronicle," 1890, i. 416, is said by Miss Woodward, in her monograph of the genus, on Consul Lehmann's authority—"who has had the advantage of examining Prof. Reichenbach's dried specimens"—to be the same as *M. trinema*, Reichenb. f., in "Flora," 1886, 538. As *M. Lowi* was not described till after Prof. Reichenbach's death, when his dried specimens were no longer to be consulted, Consul Lehmann's opinion would seem to be based on memory. A comparison of the flower of *M. Lowi* with the description of *M. trinema* suggests that Mr. Rolfe was justified in regarding his plant as a distinct species. The sepal tails of *M. trinema* are said to be much longer than the triangular bodies, whereas in *Lowi* they seem to be always markedly shorter. The bidentate tip of the column marks another discrepancy, that of *Lowi* bearing several fimbriations. Moreover, Reichenbach's statement that the dimensions of *M. trinema* are those of his *M. Gaskelliana* points to a smaller flower than that of *M. Lowi*.

Cypripedium with two lips.—He also showed this not uncommon phenomenon. As the flower had three sepals and two petals beside the lips, the result had occurred in consequence of, or in correlation with, a bifurcation of the axial cord belonging to the lip. This was borne out by a dissection of the flower.

Poterium spinosum.—Mr. Saunders exhibited a plant of this species covered with spiny branches and minute leaves with inrolled margins. These features are very characteristic of many plants growing in deserts and other excessively dry localities. It is native of Palestine, &c.

Epidendrum hybrids.—Mr. Veitch exhibited and described the following new hybrids:—*E. Wallisi* × *E. Endresi* = *E. Endresio-Wallisi*. This hybrid × *E. Wallisi* = *E. elegantulum*, *E. Wallisi* × *E. elegantulum* = *E. Clarissa*. *E. Wallisi* grows to a height of 5 or 6 feet, whereas *E. Endresi* is not more than about 1 foot in height. The first hybrid was about 2 feet in height; the second, *E. elegantulum*, grows 3 to 4 feet. There are many varieties among the *Clarissa* progeny, one being very much finer than all the rest, called *C. superba*. *E. Endresi* is a native of Costa Rica, and *E. Wallisi* of New Grenada. The hybrids partook more of the flower of *E. Endresi* than of *E. Wallisi*, which was a much larger blossom than the former.

Peduncles of Grapes becoming tendrils.—Mr. Hudson exhibited some specimens from a vine in which the whole crop had degenerated into quasi tendrils, but bearing small groups of buds upon them. It is well known that peduncles and tendrils are homologous in the Vine, and therefore interchangeable. The cause was presumably an arrested growth by excessive chill, as the roots were said to be healthy.

Fasciated stems.—Mr. Burbidge sent a series of examples of this peculiarity, remarking upon a branch of *Cotoneaster microphylla*, which had the buds continually rubbing on a roof, that this irritation possibly caused the fasciation, adding—"I am led, after considerable observation, to believe that irritation of, or injury to the normal terminal or lateral buds, whether by friction, insects, or other causes, is at the bottom of the phenomenon." He adds, "That besides being hereditary by seeds in the Cockscomb, the 'Stag's-horn' Ash—a fasciated condition—can be perpetuated by grafting." Mr. O'Brien referred to his experience that Ferns standing near an entrance of a conservatory, and continually "brushed" by passers, become more or less fasciated and crested. Mr. Druery mentioned how Ferns if tripinnate became crested in each degree. Mr. Hudson observed, that of some Water Lilies which produced fasciated stems, portions of the rhizomes were transferred to Kew; they also produced them there, showing that fasciation may be an acquired habit, and transmitted either by the vegetative or reproductive organs.

Fasciation and allied phenomena.—Mr. Henslow explained how fasciation arose from a continual bifurcation of the fibro-vascular bundles of the stem without forming cylinders for axillary buds. A similar cause gave rise to "multifold" flowers as distinct from "synanthic." It also applied to fimbriated and crested flowers, as well as multifold axes in Pears and carpels in Tomatoes. Being an "affection" it would be hereditary, as in the Tomato and the campanulate terminal flowers of Foxgloves. (Further details will appear in the paper to be published in full in the Journal R.H.S.).

Royal Horticultural Society of Aberdeen.

A meeting of the directors of the Royal Horticultural Society of Aberdeen was held on Friday, the 12th inst., in the office of the secretary, Mr. J. B. Bennett, advocate. An address was drawn up to be presented to the King. This was to be signed by the chairman and by the secretary, and be forwarded to the Secretary for Scotland for presentation. Arrangements were thereafter made for this year's exhibition, and judges were appointed for the various divisions of flowers, fruit, and vegetables.

Hanley Horticultural Fete.

The statement of accounts of the horticultural fête held in Hanley Park last July was published recently. The balance in hand on April 1st, 1900, was £971 5s. 9d. The receipts, besides the balance, amounted to £2661 0s. 1d., making a total of £3632 5s. 10d. The principal items of receipts were—Subscriptions, £170 8s.; ground lettings, £534 4s. 2d; gate receipts, £1363 15s. 10d.; sales of tickets prior to the fête, £323 4s. 11d. The expenditure was £1956 16s. 6d., leaving a balance in hand of £1675 9s. 4d. A special meeting of the Town Council to confer with the General Committee (consisting of the whole of the members of the Council and other gentlemen who are not on the Council) was also held, when the Mayor (Mr. G. Ellis) presided. Mr. W. Poulson, the newly-appointed general secretary, read the minutes of the various sub-committees who are arranging for the next fête in July. Mr. Joseph Kent read the minutes of the Horticultural Committee, and Mr. A. Kent read a report respecting the children's section.

Shropshire Horticultural Society's Spring Show.

This annual show was held in the Music Hall at Shrewsbury on April 10th, and was favoured with the first spring-like weather the locality has this season enjoyed. The attendance, as is always the case, was very large, the spacious hall being at times very unpleasantly packed. The display was, in all the chief aspects, a decided improvement upon that of last year. The Azaleas were in much better bloom than last year. The collection of twelve plants was far in advance of it, and there was an excellent display of Narcissus, both for competition and for exhibition only. Some unnamed seedlings, exhibited by Messrs. Barr & Sons, Covent Garden, included some unique and very pretty new varieties, which are sure to become popular. The local nurserymen made nice displays. Mr. E. Murrell's collection was conspicuous for Azaleas, Messrs. Jones & Sons' for Narcissus, and they took two first prizes for bouquets. Mr. A. Myers showed a grand lot of scarlet Pelargoniums, and Messrs. Pritchard & Sons, in a very large collection, had a nice lot of Heaths and Japanese Maples. Messrs. Dickson and Sons, Chester, had a very fine display of Narcissus. The judges were Mr. Blair (Trentham) and Mr. Lambert (Powis Castle).

Annual Report of the National Chrysanthemum Society.

The annual report, at least the gist of which has already appeared in the horticultural press, has now been published in the usual form by the N.C.S. The list of varieties, drawn up by the Classification Committee, and placed by this body in their proper section, is also embodied. The new varieties that received awards during the last season, and the "too-much-alike" sorts, are tabulated. The date of the annual outing to Downside, Leatherhead, does not seem to be definitely fixed yet, but it is announced to take place early in July. The dates of the autumn (and winter) shows of the National Chrysanthemum Society and its affiliated supporters are printed, and these will be found included in our own list of fixtures on a back page. Special prizes (with a first of £10) are offered for six vases of incurved blooms, distinct, five blooms of each. Other special prizes for the incurved blooms are offered. The great vase class is again to be one of the chief features of the autumn competition and fête, while Mr. Waterer's challenge cups in the amateurs' section are again to be competed for. We could wish to see a greater turn-out of exhibitors in the cup classes, and a considerable amount of better taste and skill ought to be displayed in amateurs' arrangements of flowers than has been the case in past endeavours. Mr. R. Dean, V.M.H., 42, Ranelagh Road, Ealing, W., is secretary.

Wakefield Paxton Society.

A characteristic lecture on the "Old Gardeners and the New" was delivered by Mr. H. Hazell of St. John's, before the members of the above society, on Saturday evening. The lecturer at the outset pointed out that the house and the garden should be considered as one. The old Englishman dearly loved an enclosed garden surrounded by hedges of Beeches or Yew, all well cut and trimmed. There was plenty of room for improvement in the old gardens; but fine old gardens are often pulled to pieces just to suit the whims of the clever people. Still, every period of gardening had its good and bad points. The old garden, for instance, had always a good wall round it; often a flue ran round it, and an overhanging coping stone on which could be hung nets or mats for the protection of the trees. The garden was laid out in squares with a trellis round each, and on those all kinds of fruit trees were trained. A hedge also ran across each square to break the wind. The garden was cropped in rotation, two crops never being put on in succession. The old gardener must have his garden dug properly; no 3 inch spades for him, and no standing hack in a slanting position to ease the back. He used real manure well turned over, and cut out like butter; none of your chemical manure for Old John. Woe betide the knife that dare cut one of his flowers. His Chrysanthemums were placed in small pots to keep them from growing too tall, and they were stowed away in some shady corner to save watering. Old John was quite an autocrat; no one dare suggest that he could ever make a mistake. The architect now expects the gardener to fill up all the nooks he was himself fast with, the conservatory being made to match the house, not one in which to grow plants. Now there were no fine avenues of trees to add beauty to the landscape; no grass walks with herbaceous borders on each side; no winding walks leading to the lake,

or other contrivances to add beauty to the scene. Everything must conform to the present age and fashion. Something must be grown quickly without thought of those who followed. Self was the predominating feature of the age in every walk of life, and what the next generation would think of them the lecturer did not know, further than that they had inherited plenty of large buildings, soot and smoke, but nothing was being left to clothe the land with beauty.

Ipswich Daffodil Show.

The newly formed East Anglian Daffodil Society can be congratulated on the excellent exhibition held on the 10th inst. in the spacious Corn Exchange at Ipswich. The hon. secretaries, Messrs. J. W. Andrews, of Woodbridge, and Mr. A. E. Stubbs, spared no exertions to secure a good display, though the lateness of the season told heavily against them. Probably for the first time many of the Ipswich people became aware of the marvellous diversity in form among the Daffodils, and the wealth of spring flowering plants which can be had in bloom early in April. The show was crowded with visitors during the time it was open to the public, and the promoters must have scored a financial success. The townspeople contributed liberally to a special prize fund.

The best six bunches of Daffodils, three blooms in a bunch, came from Mr. J. Andrews, Woodbridge; Mr. A. Andrews, gardener to the Hon. W. Lowther, was second. Mr. E. J. Ridley, Ipswich, was placed first with three pretty vases of good flowers. Floral decorations with Daffodils and other flowers made up a good portion of the show, lady exhibitors being numerous. Miss Steward, Woodbridge, had the best decoration of Daffodils for a dinner table, light and elegant; Mrs. Gilbert, of Ipswich, the best bouquet of spring flowers, mainly composed of Daffodils. Miss M. Carter had the best centrepiece of Daffodils for a side table, while Mrs. Betts, Woodbridge, had the best basket of the same flower. There were some artistically arranged ladies' sprays, made with Lilies of the Valley. Mr. W. Sharpe, Ipswich, was first. Studies in Violets, florally expressed, did not display much originality. Some very good cut Richardias were shown.

Five prizes were offered for the best arranged stand of florists' and market gardeners' produce, and they consisted of foliated and flowering plants, and also cut blooms. One interesting class was that for a box or basket of cut blooms to contain not less than twenty-four and not more than thirty-six bunches, and not less than six varieties; careful packing and freshness of bloom were the leading features. Daffodils were the subjects in most cases. Mr. Geo. Woodstock, St. Mary's, Scilly, was awarded the first prizes; Mr. Josiah Woodcock, Scilly, was second.

Messrs. W. Cutbush & Son, nurserymen, Highgate, London, had a very large and imposing exhibit, including many varieties of double Tulips, greenhouse Ericas, Cinerarias, Cyclamens, set up in a very tasteful manner, for which they received a gold medal.

Messrs. Wallace & Co., bulb-growers, Colchester, being near home, staged a large and extremely interesting collection of their specialties in excellent character, including the rare *Freesia anrea*, which is not sweet scented; the orange-coloured *Gerbera Jamesoni*, a plant which does best in the south of England planted on a warm border, elsewhere it should be grown in pots; *Lachenalia glauca*, *Tulipa Kaufmaniana* in excellent character, and *T. triphylla*, &c. (a silver-gilt medal).

Silver medals were awarded to Mr. Leonard Brown for a number of varieties of Daffodils in pots, grown in a compost formed of one-third of Jadoo fibre and two-thirds of grit from a gravelled road; *Maximus*, *Empress*, *Emperor*, *Sir Watkin*, *Mrs. W. T. Ware* (an excellent variety for market, because so early and so free), *Johnstoni*, *Queen of Spain*, *Horsefieldi*, *Princess Ida*, and *Barri conspicuus*, were particularly fine under this treatment. There was also a new variety of *Polyanthus Narcissus*, named *Mæstre*, large white, with deep yellow cup. To Mr. R. C. Notcutt, nurseryman, Ipswich and Woodbridge, for a very handsome group of foliated and flowering plants, arranged with great taste; to Messrs. C. Croydon & Sons, Ipswich, for rustic table decorations; to Mr. T. S. Ware, Limited, Feltham, for a large collection of cut Daffodils, and certificates of merit were given to smaller but attractive contributions.

Royal Horticultural Society of Ireland.

The annual spring function of this society was held on Friday last, the 12th inst. The display was located in the Royal University Buildings, Belfort Terrace, where the conditions were very favourable, weather being good, quality of exhibits high, but fewer entries, consequent on the elimination of several classes to enable the society to resume a sound financial position. The display must be reckoned the best all round the society had for years, which augurs well for the future. During the afternoon the Lord and Lady Lieutenant and party paid a visit, and were received by a deputation both from the Senate of the University and the Horticultural Society. The following were responsible for the judging:—Pot plants and fruit, Messrs. Dick, Wilmott, and Mitchison; cut blooms, Messrs. Burbidge, Capt. B. Roe, and Morrison; table decorations, Mrs. Domville.

CUT BLOOMS.—Mr. Pigg, gardener to Lord Cloncurry of Lyon, was an unquestioned first for *Narcissus* and Daffs in vases (excluding *Polyanthus Narcissi*); Lady F. Doyne, Wells, Gorey (gardener, Mr. Mitchell) was second, they were likewise placed in the minor classes. For a stand of twenty-four Roses, C. R. Douglass, Esq., The Villa, Rathmoylan, was awarded first; second place being taken by E. Bewlay, Esq., Rathmines.

POT PLANTS.—For nine pot Roses the competition was keen. Mrs. Goodbody (gardener, Mr. Davis), Obelisk Park, was first, and was closely followed by J. Millar, Esq., Baginbun House, Sandymount. Orchids and stove plants were well to the fore, and Azaleas were well shown by Mr. Colgan. *Dentzia gracilis* was well shown by Mr. Colohan, who was first, and also for exotic Ferns. Mr. Cavanagh was an easy first for Cinerarias. Lord Cloncurry was first for six table plants. The prize for *Freesias* was taken by Mrs. Goodbody; *Spiræas* by Mr. Geoghegan, who also accounted for the twelve and six single Hyacinths; and for the three pots of Hyacinths: R. J. Harris, Esq., Saintbury, was first. For six Crotons Mrs. Goodbody was first, and for *Azalea mollis* J. Millar, Esq., Sandymount, led off.

FRUIT AND VEGETABLES.—Fruit formed a small display, but what was shown was excellent. For six dessert Apples, we found Mr. McKenna was first, likewise for a dish of six baking Pears. For a stand of six baking Apples, Mr. Harvey was first, second Mr. Inglis. For a dish of Strawberries, first went to Mr. McKenna, but the dish sent by Countess of Caledon certainly deserved to be placed equal, as the samples were finer and equally well coloured. For a collection of indistinct vegetables, Lord Ashtown took the lead, having Peas, Turnips, and French Beans; he likewise received the Toogood Medal for a collection of six kinds; Mr. Tyndall also took a Toogood Medal. For table decoration the first prize went to Miss E. M. Pim.

NON-COMPETITIVE EXHIBITS.—Lord Ardilaun, St. Anns, Clontarf, staged a fine display, in tiers, of Orchids, Hyacinths, Primulas, Azaleas, Palms, &c.; a cultural certificate was awarded.

Mr. W. B. Jeffreys, gardener to Countess of Caledon, Tyrone, showed Violets to advantage; his own seedling, a double, an improvement on *Marie Louise*, but lighter in colour; the blooms of *La France* showed this Violet off to perfection when well grown. A cultural certificate was awarded. Mr. Moore, curator, Glasnevin Botanic Gardens, had a choicely arranged group of Orchids, Azaleas, Palms, Crotons, and Acacias. Miss Currey of Warren Gardens, Lismore, had a magnificent stand of *Narcissus* and Daffodils (gold medal).

Messrs. Hogg & Robertson, Mary Street and Rush, had a superb stand of Daffodils, *Narcissus*, Tulips, and Hyacinths (silver medal). Messrs. A. Dickson & Co., Ltd., had Roses in faultless style; the substance of petal and colouring were indicative more of June than this period, likewise a fine stand of *Narcissus* (gold medal). Sir J. Mackey and Co., Ltd., Sackville Street, had a neat display of bulbous types backed with *Kentias* (commended). Messrs. Ramsay & Sons, Ballsbridge, had a circular table of stove plants and flowering plants, light in design and very effective.

Messrs. Baylor Hartland & Sons, Cork, sent a bloom of their new trumpet Daffodil, *Hyperion* (provisionally named), and other varieties. *Hyperion* is a bicolor, with yellow slightly fringed trumpet, the perianth segments rather whitish, but not a true white, and a good long stem. A first-class certificate was awarded to it.

Next Week's Events.

Monday, April 22nd.—Chesterfield Spring Show.

Tuesday, April 23rd.—Royal Horticultural Society—Committees meet at twelve o'clock; general meeting at three o'clock. Show of Auriculas under the auspices of the N.A. & P.S. (Southern Sect.).

Wednesday, April 24th.—Royal Horticultural Society's Examination in Horticulture.

Thursday, April 25th.—Norfolk and Norwich Horticultural Society's Show. National Auricula and Primula Society's (Midland Sect.) Show; Midland Daffodil Society's Show, both at Edgbaston.

Phenological Observations.

APRIL 19TH—25TH.

PLANTS DEDICATED TO EACH DAY.

19 Fri.	Alphege.	Swallows first seen.	Bear's Garlic.
20 Sat.	Song-thrush	hatches.	Leucojum.
21 Sun.	Nightingale	first heard.	Cyprus Narcissus.
22 Mon.	Corn-crake	heard.	Wood Crowfoot.
23 Tu.	Squirrel	builds.	Harebell.
24 Wed.	Winchat	first heard.	Sloe.
25 Thr.	Whitethroat	first heard.	Early Tulip.

Trade Catalogues Received.

R. H. Bath, Ltd., The Floral Farms, Wisbech.—*Select Plants and Seeds.*
Geo. Bunyard & Co., The Royal Nurseries, Maidstone, Kent.—*Hardy Herbaceous Plants, Pot Roses, May Bedding-out Plants, Climbers, &c.*
William Paul & Sons, Waltham Cross, Herts.—*Catalogue of Seeds and Garden Sundries.*

Publications Received.

Diseases of Plants (Macmillan & Co.); Thompson's Gardeners' Assistant (Gresham Pub. Co.); Revue Pédagogique; Bulletin de la Société Centrale d'Horticulture; Agricultural Economist; Journal of the Department of Agriculture, West Australia; Meehan's Monthly; North American Forests and Forestry (Putnam); Tropical Agriculturist; Bulletin of Miscellaneous Information (Royal Botanical Gardens, Kew).



Hardy Fruit Garden.

Disbudding.—The disbudding or rubbing off of superfluous wood growths is chiefly confined to wall trees of Apricots, Peaches, and Nectarines; but it is equally applicable to Plums, Cherries, or other fruit trees on walls. Not only wall trees, however, but bush trees in the open, or trees of any form when in a young state, may with advantage receive attention to disbudding. If taken in time, and the process of removal is carried out at short intervals, disbudding is an excellent means of regulating and disposing growth in a symmetrical manner, thus giving the trees or bushes a shapely appearance, and not crowding the growths.

Apricots.—Give early attention to these trees in the matter of disbudding. The first shoots to be removed are necessarily those growing towards the wall from behind the branches. These if allowed to extend grow awkwardly, and can never be properly laid in, therefore gradually remove all of them. The next shoots to be removed are those ill-placed on other parts of branches, finally thinning-out the remainder. As the Apricot bears on spurs as well as young shoots, the complete removal of shoots not required to lay-in or retain at full length may in some cases be avoided by shortening the growths to three or four good leaves, when they will form spurs. Some growths on the branches grow sufficiently short and compact without pinching or stopping. These are termed natural spurs, and are quite of a fruitful character. Spurs resulting from shoots that have been shortened are termed artificial. As a rule but few of these originate on Apricot trees, the chief bearing growths either being previous year's shoots or the natural spurs.

Peaches and Nectarines.—Disbudding should commence immediately growths push, dispensing first with all those that are from their position unnecessary, being ill placed, or would cause crowding. Gradual removal is in all cases best, and especially when the weather is cold should a limited number be removed. The best growths for laying in are those situated on the upper side of branches in convenient positions, while for shortening to form spurs select foreright shoots, that is, those extending at right angles from the wall. The rule for disbudding Peaches and Nectarines is to select a good growth at the base of each fruiting shoot to form a successional after the bearing growth is cut away, which may be done when the fruit has been gathered. A growth at the apex of the fruiting shoot must also be retained in order to attract sap to the fruit. The intermediate growths must be well thinned out, leaving one here and there along the entire length. When small the growths can be rubbed out with finger and thumb, but on attaining strength they must be cut out, though the chief disbudding should be accomplished before the latter stage is reached.

Plums and Cherries.—In the first process of training young trees on walls the practice of judicious disbudding will help materially in regulating the growths to advantage, selecting shoots for extending at the places best adapted to produce suitably shaped and balanced trees. In old trees some disbudding is always necessary in order to curtail the mass of shoots which annually push, reducing them to a reasonable number so as to avoid crowding.

In training Morello Cherries, and carrying out the disbudding, a larger number of shoots may be retained than is customary with other varieties, eventually laying in shoots 3 or 4 inches apart. The practice, therefore, of disbudding may largely follow the lines laid down for Apricots, Peaches, and Nectarines. A fair number of spurs may be retained, as in Apricots, and a fair amount of young wood, as in Peaches and Nectarines. Depending solely upon young shoots for producing the fruit leads to good results. So, also, is the case when a judicious number of spurs is encouraged as well.

Mulching Strawberries and Raspberries.—A liberal mulching of manure laid down between the rows of established Strawberries is of great assistance in furnishing food and an equable state of moisture to the fibrous roots. A mixture of manure, consisting of long and short, may be used. The strawy part, after becoming well washed by rain, affords an excellent bed for the fruit to rest upon during ripening. Raspberries enjoy a liberal dressing of rich manure over the roots, this tending to keep them well enriched and moist, thus encouraging the production of abundant fibrous roots near the surface.

Destroying Aphides and Caterpillars.—Should aphids attack the young growths of wall trees, a dusting of tobacco powder will serve to prevent their increase. One cause of these insects attacking the trees is dryness of the soil about the roots, hence examination should be made of the border, and if found to be dry, make several holes of good depth with a crowbar, and repeatedly fill with water, to thoroughly soak the soil. In addition to aphids, Apricots are liable to be attacked with leaf-rolling caterpillars, the Apricot moth (*Tortrix angustiorana*). The remedy for these is pinching the rolled-up leaves to crush the caterpillars, or during the early stages of attack spray the trees with Paris green, 1 oz. to 20 gallons of water.

Fruit Forcing.

Cucumbers.—Although shading will be necessary for an hour or two in the middle of the day to prevent flagging during bright weather, it is not advisable to have recourse to this more than can be helped, as the firmer the growths the more healthy the plants, and the cleaner and heavier the fruit. Water will be required abundantly, but not to the extent of making the soil sodden, and the consequent loss of the root hairs, if not actually of the tender young fibrelets, hence stunted growths and fruit are the consequence. Plenty of atmospheric moisture secured all day by frequent damping prevents evaporation to a great extent, lessens the need of water at the roots, and insures free growth and fruit swelling.

Syringe the plants about 3.30 P.M., or earlier on dull days, closing the house at the same time. Attend two or three times a week to the tying of the growths loosely, removing dead leaves, thinning the shoots, cutting out exhausted wood and laying in successional, stopping one joint beyond the show for fruit. Keep young plants near the glass to insure a sturdy growth and stout stems. Sow seeds for raising plants to occupy houses, pits, or frames, after forced vegetables or bedding plants are removed.

Watering.—In watering plants in pits and frames do it early in the afternoon, maintaining a good bottom heat by linings renewed as required. Ventilate early and moderately, securing 90° from sun heat, husbanding this by early closing, and employ good night coverings over the lights. Avoid overcrowding, stopping the shoots one joint beyond the fruits, and removing bad leaves as they appear.

Peaches and Nectarines.—*Earliest Houses.*—The stoning process being over with the earliest varieties, they may be given a temperature of 70° to 75° by artificial means, allowing it to fall to 65°, or even 60° on cold nights, keeping through the day at 80° to 85° from sun heat, the trees being well syringed, and good atmospheric moisture secured; but the fruit and foliage must become fairly dry before night. Draw aside or remove the leaves over or in front of the fruit, and turn this up to the light by thin laths placed across the trellis.

Syringing should cease when the fruit commences ripening, but a genial condition of the atmosphere must be maintained, for the benefit of the foliage, by damping the paths and borders twice a day, or as necessary. Unless the fruit is required by a given time, or as early as practicable, it is advisable to proceed more gradually, not keeping the temperature more than 60° to 65° at night, and 70° to 75° by day with gleams of sun, and 5° to 10° advance on bright days, until the stoning is completed, or even during the last swelling of the fruit.

Houses Started at the New Year.—The fruit is in a more forward state than usual, the disbudding, heeling-in of the shoots, and the fruit thinning having been properly attended to. Allow no more growths to remain than are necessary for next year's fruiting or the extension of the trees. Stop gross growths, or remove them, as it is highly important to equally distribute the sap. Pinch laterals at the first joint, and shoots retained to attract the sap to the fruit should only be allowed moderate extension, stopping them in the first instance at three or four joints of growth. Endeavour to provide an even distribution of foliage, that will shade and protect the wood from the direct rays of the sun as the season advances. Ventilate early, but carefully. As the fruits are swelling fast thin them, as with the trees in good health the fruit is more likely to stone well than when they are overbarren. Water the inside border copiously when supplies are required, and mulch with a little sweet, rather lumpy manure.

Houses Started in February.—Disbudding should be proceeded with, being careful to retain a shoot at the base of the current year's bearing shoots, and to leave no more on the extensions than will be required for furnishing the trees with bearing wood at 15 to 18 inches distance apart, and all the others on these may be pinched in closely to form spurs. A shoot on a level with, or above, the fruit must also be retained on each bearing shoot, and be pinched at the third joint, laterals being stopped to one leaf as made.

As the fruit is swelling freely remove those worst placed, and leave only a few more than will be required for the crop. Syringe early on fine mornings, give a little air shortly afterwards, gradually increasing it, and close about 3 P.M.; but if the weather be very bright late closing must be practised.

Houses Started in March.—As soon as the fruit is set, and the young growths progressing, aphides make their appearance, when they should be promptly assailed by insecticides. Nicotine compound vapour is very effective and cleanly, as also is fumigation with tobacco paper or rag, but an overdose of either of these does more harm to the foliage and tender fruits than the insects. Indeed, the foliage of Peaches and Nectarines is so tender, and the young fruit so susceptible of injury, that we do not advise the practice, or very moderately on two or three consecutive evenings, leaving the foliage quite dry, the house being well ventilated previous to the time of closing for vapourisation or fumigation, and then operating so as to deliver the vapour or smoke cool, and not to an excessive extent. Quassia water, made by steeping 4 ozs. of chips overnight in 2 gallons of water, and boiling for a quarter of an hour, adding to it 4 ozs. of softsoap as it cools, and straining before use, may be used for dipping twigs in and gently rubbing the affected parts with the fingers, thus dislodging the sit-fast brown Peach aphids, *A. persicæ*. Afterwards syringe the trees, or preferably, spray them, as the liquid goes four to six times further

diluting to 4 gallons with hot water and applying when cool enough (90° to 100°). Syringe moderately in the morning and on fine afternoons, always early enough to allow the foliage to become fairly dry before nightfall. Dishud gradually, and rub off all small and badly placed fruit as soon as the most promising show signs of taking the lead. Ventilate freely on all favourable occasions, and close early with a view of hushanding sun heat, but avoid a close, vitiated atmosphere, admitting a little air constantly to prevent it.

Late Houses.—Though the trees in these are rather unusually forward there is no great disadvantage where they are provided with means of excluding frost, as the ripening can be retarded by free ventilation through the summer. Ventilate freely, but keep safe from frost. During the flowering and afterwards a temperature of 50° should be maintained by day, keeping it at that with a little gentle circulation of air, turning off the heat early in the afternoon, so as to allow the pipes to cool before night, and the temperature falling to its night minimum of 40° to 45°, which is quite safe, and ought to be secured with a little air to prevent the deposition of moisture through the night on the flowers. Artificial fertilisation should be resorted to, but the best security for setting are perfectly developed blossoms, and a genial, well aerated atmosphere.



*. All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Carpet Bedding Design (P. B.).—You will find a goodly selection, with full descriptions for the filling of the beds, in Cole's "Royal Parks and Gardens of London," price 2s. 6d. from this office. You might also write to Messrs. Cannell & Sons, Swanley, and Messrs. Toogood & Sons, Southampton, who, we believe, publish little booklets of designs at a few pence each.

Crossing Primulas (A. G. Hookings).—Mr. Hookings writes to us as follows:—"I was much interested in the article written on *Primula Kewensis* and *Primula obconica*, which appeared in your Journal on March the 8th, 1900, signed by 'Scrutator.' I enclose a few blooms of *Primula stellata* crossed with *Primula obconica*. The plant has the habit of *Primula stellata*, *Primula obconica* being the pollen parent. I shall feel obliged if you will give me your opinion of them through your valuable Journal." In reply to our correspondent we can only say that there seems little or no appearance of any real cross having been effected. Had *Primula obconica* been the seed parent, then we would have said at once that the male or pollen plant—which, of course, would thus have been *P. stellata*—had been entirely prepotent, and had had all the influence. It is doubtful in your case whether the pollen from the *P. obconica* blooms ever fertilised the flowers of *P. stellata* at all. The yellow disc or eye of the flowers you sent was very bright and deep, but otherwise there was not the slightest clue to any cross having been made. Have any others of our readers tried this cross; if so, would they let Mr. Hookings know the results? At any rate, have another try; and why not try to cross with the Sieboldi varieties?

Heating Power of Saddle Boiler (Henri).—The boiler, 6 feet long from doors to furnace end, 18 inches wide, and about same in depth, being an ordinary saddle, will have actual heating power of 1000 feet of 4-inch pipe, but allowing for depreciation through sooty deposit this will be reduced about one-fourth, or to 750 feet. If, however, the boiler has a waterway end, with flue openings at sides, it will have a heating power of 1600 feet of 4-inch piping, and allowing a fourth for depreciation through sooty deposit, should heat 1200 feet, the flues being kept clean and good stoking practised. Possibly the best way to take off the coating of lime in the boiler would be to throw into the tank or boiler 2 ozs. of caustic soda to every 100 gallons of water; though an excess of caustic soda will not injure the boiler in any way, yet it is not advisable to use more than 3 ozs. of caustic soda to every 100 gallons of water thrown into the boiler. To prevent incrustation the water should be softened, $\frac{1}{2}$ lb. of caustic lime made into milk in a pailful of water and thrown into 400 gallons of water; the caustic lime neutralises the carbonic acid, removes the solvent, and becoming at the same time carbonate of lime, is precipitated with that originally in solution. Hard water may also be softened by using a pound of anti-calcaire to 250 gallons of water, or a quarter pound of washing soda, dissolved in hot water, to 36 gallons of water, allowing in either case to stand twenty-four hours, when it will be soft. When the water is used care should be taken not to disturb the sediment.

Oxera pulchella (A. M.).—Unfortunately we have not the full address of "R. H.," who wrote the article you refer to. We shall pursue our inquiries. Have you written to one or two of the large plant nurserymen?

Collection of Vegetables (Essex).—As a rule in large societies, or where the exhibitors are intelligent, experienced gardeners, and the best trained judges are expected to judge, such wording as "For the best collection of vegetables" is held sufficient. The case is very different when cottagers' collections of vegetables are considered. It is much the wiser plan to specify a certain number of vegetables, and even to name them (in order of importance) in the schedule. Such a course then greatly relieves the judges from suspicions of favouritism or other unpleasantness when the show comes off. Better be explicit than run the risk of any hickerings, which generally act unfavourably on societies.

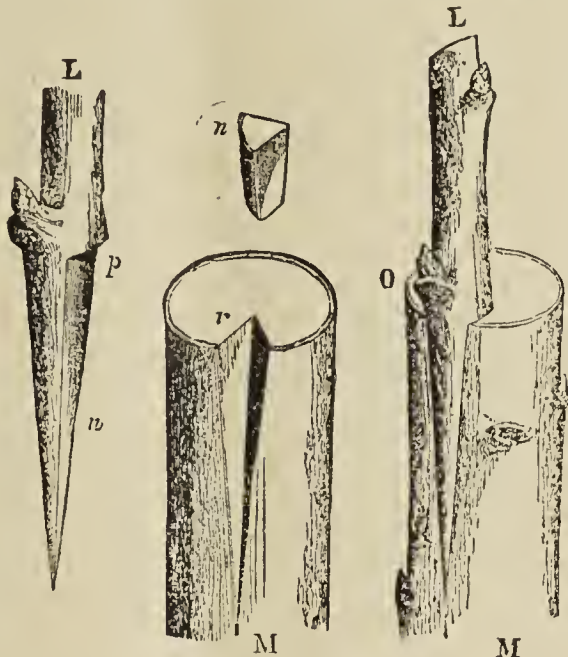
Soaking Peas in Petroleum before Sowing (J. W. M.).—Paraffin oil may safely be used for dressing Peas and Beans before sowing, we having practised it for many years as a safeguard against mice and rats taking them; but, instead of soaking the Peas, we place the quantity to be sown at one time of the respective variety in a flower pot sufficiently large with the hole corked, and sprinkle on them the petroleum in amount calculated to moisten them all over, this being effected by shaking the Peas in the pot by an upward and turnover movement, until coated with the oil all over the skin, any excess of oil being run off by holding the hand over the seed and partly inverting the pot. Such practice we have found very successful, the seed being sown at once, not any pests interfering with the seed, and this is not prejudiced by the dressing. It is not advisable to use petroleum in the raw state for watering Peas or other crops after the seed is sown and the plants growing, as the oil itself is injurious to the growths and prejudices the soil as a rooting and feeding medium. If used, it should be in the form of emulsion, which may be purchased in the form known as petroleum or paraffin softsoap, or made as follows for use as required. Dissolve $1\frac{1}{4}$ lb. of softsoap by boiling in a gallon of water, and when dissolved remove from the fire for safety, and add half pint of petroleum, stirring briskly with a switch made of twigs, or part of an old hirsch broom, until thoroughly amalgamated, and dilute with hot water to eight gallons for use, applying when cool enough, either by means of a syringe or rose watering pot. At this strength it may safely be used on Peas or other crops with smooth leaves, preferably in the early evening as preventive of predatory pests attacks. For use on fruit trees and other crops it should be diluted to twelve gallons, and is very effective against aphides, red spider, &c.

Heating Lean-to Plant House in Three Compartments (W. R. R.).—The most simple and economical mode of heating the structures would be to have the stokehole and boiler fixed at the point in the boiler-shed near the first partition, but so that the flow and return pipes would be in the stove, and taken across the end of it alongside the partition beneath the floor level. After crossing the front (and we presume only pathway, there being a shelf in front 3 feet wide, and then a pathway of about that width, leaving 4 feet for hack staging) the flow pipe should branch to the right and left by means of a T piece, and on the stove side of this a screw valve should be affixed. A two-branch pipe should adjoin the valve, and two rows of 4-inch pipes taken along the front of the stove beneath the shelf and across the end to the doorway, where on each, at the point just before the return is made and on the syphon, should be an air-pipe, the pipes continuing back beneath the other or flow pipes to where these branch, and there the small returns are joined to the return pipe by a two-branch pipe. The stove will thus have two flows and two returns along the front and part of one end, and also the main flow and return pipes at the other, the pipes being in a flue with iron grating over. The other branch from the main flow should be taken through into the middle compartment, and a screw valve affixed just within, then a two-branch pipe, two pipes along the front to near the end, there fixing a two-branch pipe, and next this an H piece, which has two throttle valves. The return will thus be made by a single pipe. To heat the greenhouse a flow and return pipe along the front will suffice, continuing these from the H piece, and with proper incline, so as to have the highest point at the further end of the greenhouse compartment, and there an air pipe on the syphon. By this arrangement the greenhouse can be heated by opening the H valves, or closing them when not required, thus saving a flow and return pipe the whole length of the intermediate compartment. To heat the pits you will require to take forward a flow from the main flow pipe, and have a valve, so as to regulate the heat as desired, a 4-inch pipe being mostly sufficient along the front. There will be about 100 feet of 4-inch piping in the stove, 36 feet in the intermediate house, and 32 feet in the greenhouse, which, with between 40 and 50 feet in the pit, will aggregate under 250 feet of 4-inch piping, and would be satisfactorily heated by a 24 inches long saddle boiler with waterway and flue openings at sides, this having a calculated heating power of 350 feet in 4-inch piping, though it is always better to have a boiler above rather than below its heating power, therefore advise one of 30 inches length, heating 450 feet of 4-inch piping. As you require a somewhat high temperature in the stove, it would be advisable to have a flow and return pipe at the back beneath the staging. By the foregoing arrangement you would be able to heat all the structures separately or together, excepting the intermediate house, through which the hot water must pass to heat the greenhouse. It is desirable to have valves on both the flow and return pipes, as when not on the latter the heat is liable to back-up them, though the flow valves are closed.

Book on "Market Gardening" (J. Cleland).—The book you want, embracing gardening for profit, can be obtained at the office of "The Fruit-Grower," 2 and 3, Salisbury Square, Fleet Street, London. The Express Publishing Company's address is Carmelite Street, E.C.

Wedge Grafting (Experimentalist).—Though the figure produced here has been depicted in this Journal only a few years ago, we again reproduce it for your sake.

Wedge grafting is certainly a good system, and one which every gardener, old and young, ought to be practically acquainted with. L, in the accompanying sketch, is a triangular scion cut as shown at *n*; the shoulder at *p* serves as a rest for the scion when placed on the stock; *n* is a section of the scion when cut. Before cutting the stock M, place the section on the part where the scion is to be inserted, and trace its outline in pencil at *r*, then cut on the stock a corresponding notch as represented at M to receive the scion; it will then have the appearance as shown



WEDGE GRAFTING.

in the figure L, O, M, and it only remains to bind the whole with matting, and cover with grafting wax or clay.

Beetle to Name and Means of Riddance (R. J.).—The beetle is the grooved or black Vine weevil, *Otiorhynchus sulcatus*, in which state it feeds on the leaves and shoots of various plants both indoors and outdoors, amongst which Vines, Peaches, Ferns, and many other plants may be included under glass, while outdoors particular attention is paid by the pest to Raspberries and Strawberries, and various vegetable and root crops, indeed, upon "ponds" it is almost omnivorous. As the habit of the beetles is to shelter away from the light during the day, and to feed at night, the best means of riddance under glass is to spread white cloths below the fruit trees or plants they attack the day before, and at night, after dark, enter the structure with a lantern, giving a large and bright light, but this obscured, and approach the place of infection cautiously, there shaking the infested subject sharply, and turning on the light, collect the fallen weevils, easily seen on the white cloth, and place in a vessel containing hot water or some petroleum, giving the latter a shake occasionally as the weevils are placed in. This is the safest means, and persisted in for a time on consecutive evenings soon effects a clearance. The insects sham death for a short time after being disturbed, and are readily collected; but if a white sheet is not used, and the light is dim, many of the beetles are almost certain to escape, from their colour being so like that of ground.

Flowers of Mrs. Pearson Vine Dropping off just Prior to Opening (T. and S.).—The chief cause of this, common also to Muscat of Alexandria and Canon Hall Muscat, is grossness of wood, or its imperfect maturing during the previous season, and this results in indifferently formed floral organs in embryo; hence the bunches are either blind—that is, do not develop the flowers, or cast the flower buds just before they should expand. The border being outside is against this variety of Grape Vine, and also its being young and vigorous, the wood not ripening well and the buds not forming perfectly, though other varieties—Madresfield Court, Black Hamburgh, and Black Alicante—do well under the same conditions of soil. In no other way can we account for the collapse of the flower buds, which is consonant with our experience, the Vines doing better as they grow older, and the wood, in consequence of the lessened vigour, being better ripened. We have also found good results attend a top-dressing of the following mixture:—Dissolved raw bones, dry and crumbling, three parts; double sulphate of potash and magnesia, two parts; and ground gypsum, one part mixed, applying 4 ozs. of the mixture per square yard and pointing in very lightly. It is best applied when the Vines are at rest, shortly in advance of their starting into growth, but we should give a dressing now. The tendency of the dressing is to favour the fruiting of the Vines and a good colour and finish in the Grapes. If any difficulty in procuring the double sulphate of potash and magnesia, take two parts sulphate of potash and one part sulphate of magnesia mixed together, and of this two parts the mixture.

Names of Plants (S. H. G.).—*Lycaste aromatica*. (A Weekly Reader).—*Cœlogyne Sanderiæ*. (R. F. Reid).—1, *Thyracanthus rutilans*, see article in last week's Journal; 2, *Dædalacanthus nervosus*. (A. B.).—1, *Dendrobium luteolum*; 2, *Rhododendron ciliatum*; 3, *Primula denticulata*; 4, *Odontoglossum Rossii majus*. (A., Salisbury).—Yes, the leaves are those of *Galax aphylla*. (S. T. W.).—1, *Allium neapolitanum*; 2, *Iris stylosa*; 3, *Prunus divaricata*, but difficult to recognise. (A. Hope).—1, *Selaginella grandis*; 2, *S. græca*. (J. R.).—*Epidendrum radicans*, very good. (F. L. R.).—Apples: 1, Hoary Morning; 2, Tower of Glamis; 3, Lord Derby.

Covent Garden Market.—April 17th.

Average Wholesale Prices.—Fruit.

	s.	d.	s.	d.		s.	d.	s.	d.		
Apples, cooking, bush. ...	5	0	to	7	0	Lemons, Messinas, case	9	0	to	12	0
„ Tasmanian, case	12	0		15	0	Oranges, case	15	0		25	0
Cobnuts, doz. lb., best ...	6	0		0	0	Pears, $\frac{1}{2}$ case	14	0		16	0
Grapes, Hamburgh, lb. ...	4	6		5	0	Pines, St. Michael's, each	2	6		4	6

Average Wholesale Prices.—Vegetables.

	s.	d.	s.	d.		s.	d.	s.	d.			
Artichokes, green, doz. ...	2	0	to	3	0	Horseradish, bnch... ..	1	2	to	1	6	
„ Jerusalem, sieve	1	6		0	0	Leeks, bunch	0	1	1	0	2	
Asparagus (Sprue Grass)	0	0		10		Lettuce, doz. French ...	1	0		1	4	
„ English, 100 ...	4	0		4	6	Mushrooms, forced, lb. ...	0	8		0	9	
„ Giant, bundle ...	15	0		20	0	Mustard and Cress, pnnt.	0	2		0	0	
„ Spanish, bundle.	1	9		2	0	Onions, Dutch, bag ...	5	0		0	0	
„ Paris Green ...	5	0		6	0	„ English, cwt. ...	5	0		0	0	
Batavia, doz	2	0		0	0	Parsley, doz. bnchs. ...	2	0		3	0	
Beans, French, lb. ...	1	0		1	2	Potatoes, cwt.	3	0		7	0	
„ Jersey, lb.	2	0		0	0	„ New Jersey, lb	0	5		0	6	
Beet, red, doz.	0	6		0	0	Radishes, doz.	0	9		1	0	
Broccoli, bush....	0	0		0	1	0	Rhubarb, doz.	1	0		1	3
Cabbages, tally ...	3	0		5	0	Savoy, tally	4	0		5	0	
Carrots, doz. bnch....	2	0		3	0	Scotch Kale, bushel ...	0	6		1	0	
Cauliflowers, doz. ...	1	6		3	0	Seakale, best, doz. ...	14	0		16	0	
Celery, bundle	1	0		1	9	„ 2nd, doz.	6	0		8	0	
Chicory, Belgian, lb ...	0	4		0	0	Shallots, lb.	0	4		0	0	
Corn Salad, strike ...	1	0		1	3	Spinach, bush.	4	0		5	0	
Cucumbers, doz.	3	0		5	0	Tomatoes, Canary, case	4	0		4	6	
Endive, doz.	1	3		2	0	Turnips, doz.	2	0		3	0	
Greens, bush.	1	0		1	6	Turnip tops	0	9		1	0	
Herbs, bunch	0	2		0	0	Watercress, doz. ...	0	6		0	8	

Average Wholesale Prices.—Plants in Pots

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz.	12	0 to 18	0	Ferns, small, 100	10 0 to 16 0
Acers, doz.	12	0	24 0	Ficus elastica, each ...	1 0 7 6
Aralias, doz.	5	0	12 0	Foliage plants, var., each	1 0 5 0
Araucaria, doz.	21	0	30 0	Fuchsias	9 0 10 0
Aspidistra, doz.	18	0	36 0	Genistas, doz.	8 0 12 0
Aspidistra, specimen ...	15	0	20 0	Geraniums, scarlet, doz.	6 0 10 0
Azaleas, various, each ...	2	6	5 0	„ pink, doz.	8 0 10 0
Boronias, doz.	20	0	24 0	Hyacinths, doz.	6 0 12 0
Cinerarias, doz.	6	0	8 0	Hydrangeas, white, doz.	18 0 24 0
Crotons, doz.	18	0	30 0	„ pink, doz.	18 0 24 0
Cyclamen, doz.	8	0	10 0	Lycopodiums, doz. ...	3 0 4 0
Dracæna, var., doz. ...	12	0	30 0	Marguerite Daisy, doz. ...	8 0 12 0
Dracæna, viridis, doz. ...	9	0	18 0	Mignonette, doz.	6 0 9 0
Erica, various, doz. ...	8	0	18 0	Myrtles, doz.	6 0 9 0
Euonymus, var., doz. ...	6	0	18 0	Palms, in var., doz. ...	15 0 30 0
Evergreens, var., doz. ...	4	0	18 0	„ specimens	21 0 63 0
Ferns, var., doz.	4	0	18 0	Pelargoniums	10 0 12 0

Average Wholesale Prices.—Cut Flowers.

	s.	d.	s.	d.		s.	d.	s.	d.		
Arums, doz.	1	6	to	2	6	Maidenhair Fern, dozen	4	0	to	6	0
Asparagus, Fern, bunch	1	6	2	6	bnchs.... ..	4	0	to	6	0	
Azalea, doz. bnchs. ...	4	0	5	0	Mignonette, English, doz.	6	0	9	0		
Camellias, white, doz. ...	2	6	0	0	Narcissus Ornatus, doz.	1	6	2	6		
Carnations, 12 blooms ...	1	6	2	0	„ Campenelle „	1	0	1	6		
Cattleyas, doz.... ..	10	0	16	0	Odontoglossums	3	0	4	0		
Daffodils, doz. bnchs. ...	2	0	4	0	Primroses, yellow, doz....	1	0	1	6		
Eucharis, doz.	2	0	0	0	Roses, Niphetos, white,						
Freesia, doz. bnchs. ...	1	6	2	6	doz.	1	0	2	0		
Gardenias, doz.	2	0	3	0	„ yellow, doz. (Perles)...	2	0	0	0		
Geranium, scarlet, doz.					„ red, doz.	2	0	0	0		
bunches	4	0	6	0	„ Catherine Mermet, doz.	2	0	4	0		
Hyacinths, doz. bnchs. ...	8	0	0	0	Smilax, bunch	3	0	4	0		
Lilium lancifolium album	3	0	5	0	Spiraea, doz. bnchs.... ..	4	0	6	0		
„ rubrum	3	0	5	0	Stock, white, doz. bnchs.	2	0	2	6		
„ longiflorum	4	0	0	0	Tulips, yellow, doz. bnchs.	9	0	12	0		
Lilac, white, bunch, ...	3	0	0	0	„ white „ „	10	0	12	0		
Lily of the Valley, 12 bnchs.	8	0	12	0	„ red „ „	6	0	8	0		
Marguerites, white, doz.					Violets, single, doz. bnchs.	0	9	1	0		
bunches	3	0	4	0	„ double, doz. bnchs	1	6	2	6		
„ yellow, doz. bnchs.	2	0	3	0	„ Star „ „	1	0	0	0		



The Pity of It.

THE older one grows the more sympathising one ought to get. The young cannot understand what a heart-rending business it is to sever old connections, to find in old age a new home. The young are all for change, it is only the old who feel in its greatest intensity the pain of parting. During the last few weeks we have witnessed some sorrowful scenes, and scenes that, alas! are of frequent occurrence now. Here in this part of the world the greater number, or, indeed, the whole of farm changes take place at Lady Day, Michaelmas flittings

are unknown. The tenants that are leaving are not doing so to enter on other holdings of larger acreage or more importance; they are leaving simply because they must. No longer, indeed, can they make ends meet. It is not that the farms are bad, nor over-dear, it is simply because the farmer's capital is exhausted, and he can struggle on no longer. We are quite aware that it would have been wiser to have given up some years ago; there would then have been a remnant saved, but hope dies hard. There might be a rise in prices, there might be extra good crops, and the thought of giving up the old home was bitter. There were the children, too, to consider; let them get some education. To no class of men is other occupation so closed as to the farmer. If you should inquire of every farmer leaving his holding this spring there will not be one who is not going out with far less money than he entered. Everything has so gone down in value that the money he has to receive for tenant right and valuation is far less than what he paid on entering; and the stock, too. Certainly the sales during the last month must have been very disappointing. For holding, stock farmers have not had the money, and for fat stock ready for the butcher—these men have a way of standing in' together, and not bidding against one another.

Town dwellers do not understand the ties that bind a farmer to his farm and village. As is the case here, the tenancy has extended over a century. The farmhouse has seen the birth of at least three generations, the name of the farmer and the village go together. Every field has associations, and the churchyard is sacred to the memory of many kinsfolk. A farm is a little community in itself, and it finds employment for so many. The house has probably been improved, and certainly beautified, and there is without doubt a pleasant garden. All this has to be left, and for a small, confined house in a town, there are so few to be had in the villages. We know of a farmer now who is content to wait a year so that he may have a village house. There are so many little comforts and pleasures that have to be given up—the fresh milk, the eggs, the poultry, the old pony and older pony cart, and, worst of all, the freedom of the country life. And the one thing that hurts is that in no case that we know of are the farms re-let to persons of the same standing as the outgoing tenant. The new tenants are one and all from a lower rank of life, and that farmhouse is no longer one where the refinements of life are given the first place. There may have been great poverty, but a certain amount of appearance has been kept up. But the new man is all for utility; he sees in the lawn a grand place for hencoops, or lets the grass grow to get a good "bite" for the young calves. As much of the garden as possible is planted with Potatoes, and the rest given over to the tender mercies of a labourer of the hedging and ditching variety. The children, if there are any, are packed off to the village school, and the labour bill is reduced to the smallest possible limits.

The men who reap the most from these changes are the auctioneers and valuers. These auctioneers run in couples; and curiously assorted couples they are. Each man thinks it is he who gets the work—his particular merit—his partner is only sleeping. How men do deceive themselves! There is the tall, courtly old man, who has the admirable knack of just saying the right thing; he can gauge his company to a nicety. If there is a weakness of leg he draws attention to the shape of the head. He asks you to admire the ripeness of the cow if she is one quarter short; the masculine appearance of the ram if he has not much of a fleece. His partner is more saturnine and brusque, and though not so good in the auction ring, will see there are no mistakes in the accounts. There is another burly man who brings with him an atmosphere of fresh air and energy. He makes a sale go, by putting in bids of his own. He is a farmer on a large scale, and can always place what he buys; he never ceases talking, and fairly bullies customers into bidding. He thinks he gets the sales, but it is rather the quietness and gentleness of his partner that induces the confidence of the public. The sales this spring have not been in favour of the outgoing tenant; he has stood by and watched the dispersion of his goods with a sorrowful eye. The stock was in fine condition; the sheep—well, mutton in the shops is very dear, very much out of proportion to what the farmer gets. The horses are strong and well bred, and as work throughout the country is backward, they alone of all the stock have realised their full value; but even with this redeeming feature money rolled in but slowly. The implements were from good makers, and practically equal to new; but the fact of the matter is farmers have at present no spare cash, and sorry as they may be for their neighbour, they are not in a position to help him much.

How melancholy the place is the day after the sale—all life and movement gone, and any shabby places and bad buildings look worse than ever. The labourers have already found new masters; the old pony is no longer saddled and bridled in the stable waiting for the daily round; the house dog went with the last load of furniture, and there is nothing now to say good-bye to but the graves in the churchyard. Is not many a one thinking how much rather that narrow bed and rest than the tiny house in the town street?

A retired farmer is a most hopeless being; there are so few ways open to him by which he can gain a livelihood. To begin with, he is

generally too old, and has lost touch (if ever he had it) with the busy, active world. He may sell seeds or cake or tillage on commission, but the thing is so overdone. He rarely goes back to the old home, it is too painful. One visit has to be made for the sake of the valuation, and, alas! these valuations have a knack of coming out badly, and there is little money to take. We do not say the auctioneers do not deserve reward, their work is hard, and this spring particularly has been most trying. Bitter winds and black frosts do not tend to make a long day out of doors altogether pleasant, but there is a good bonus to sweeten the toil. When once a man gets a name and a good connection, his fortune is made. There are firms that have reputations far beyond the confines of their own district. These men are quite the local Tattersalls; Thorntons, Sextons and Grimwades of their own provinces; and yet how few of these men are succeeded by their sons! We hardly know of a son on whose shoulders the paternal mantle has fallen. One reason, we think is, the father earns so much money that the son does not feel the need of seriously applying himself to business. This is a thing that spoils scores and scores of young men. There is nothing like fighting your own way up, and more men are hindered by well meant help than by any other cause.

Speaking of these large farms and farmers, we would in the face of all these changes quote the words of a well-known land agent in Yorkshire who for many years has managed the estates of a noble lord. On retiring from his agency last week, he says his experience has shown him that, after all, and in spite of all vicissitudes, the large farms are best both for landlord and tenant, attracting, as they do, men of a superior class, who spare neither money nor themselves to farm scientifically.

Work on the Home Farm.

A fine Easter, but oh! how windy. The poor cyclists must have had dire experiences. Farmers, however, would rejoice in the drying influences which would make drilling more possible. How difficult matters have been is shown by the remark of a leading agricultural light—one who misses few opportunities—that Lent was over, and he had not sown an acre of Lent Corn. The backward state of spring work has naturally very much strengthened the trade for useful horses at the spring sales; the demand has been very good, and even for well worn animals of too certain age the figure has seldom stopped below a £10 note.

Wheats have stood the cold wet weather fairly well, and there is nothing to complain of as regards loss of root. The plant is almost too full a one, and may require a little help in the way of top-dressing about the end of this month, but it is a good fault. When shall we be able to criticise the appearance of Barley and Oats? We have not seen any above ground yet. Unless we have something startling in the way of weather there is every prospect of a late harvest. The hedgerows are budding, and will soon be green, but the fields they enclose are still brown. Even the young Clover, bountiful as is the plant, is beginning to look bare, few seed fields are unstocked, the lambs are getting a bit of size and beginning to graze, and growing weather is necessary if pastures are to keep pace with the requirements of nine mouths for each acre. The Mangold heap is proving its value every day; it fulfils so many requirements. What a grand thing it is when a good range of grass, aided by plentiful Mangolds, enables us to keep the ewes out of the new seeds until May. The latter carry so much more stock when they have a good start, and are so much more capable of withstanding droughty weather later on.

College of Agriculture, Downton.—The winter session of this college ended on Thursday, April 11th, when the following awards were made:—The diploma or certificate of membership of the college, after two years' residence and passing in all the subjects taught, to H. F. Crick, Priestgate, Peterborough, and to W. Hair, Abbey Street, Carlisle. Certificate of practical proficiency in agriculture to H. F. Crick; W. Hair; G. H. C. Cadman, Clifton Holme, York; J. E. Whitnall, The Grange, Wilmslow, Cheshire; M. H. Heath, 29, Warrior Square, St. Leonard's-on-Sea; J. S. Bidwell, Estate Office, Drayton Manor, Tamworth. The college scholarship of £15, to J. C. Thompson, Knighton House, Leicester. Prizes were also given in the various subjects as follows:—A. R. Margesson, Finden Place, Worthing, agriculture, building construction, estate management, forestry, and chemistry; J. C. Thompson, agriculture, veterinary science, building construction, estate management, book-keeping, chemistry (theoretical), chemistry (practical), and knowledge of live stock; C. Crawley, 56, Kingston Crescent, Portsmouth, agriculture, veterinary science, building construction, estate management, book-keeping, chemistry, and physics; R. O. Cox, Stone House, Winchfield, Gloucester, wagon driving, milking, attention to farm, and valuation of farming stock; M. R. Heath, veterinary science; G. H. C. Cadman, book-keeping; M. V. Stewart, Estate Office, Vaynol Park, Port Dinorwic, North Wales, building construction; H. F. Crick, practical chemistry; T. R. B. Seigne, Grenane House, Thomastown, Co. Kilkenny, butter-making; R. A. Cullen, Southbourne-on-Sea, Hants, attention to farm; A. Wrightson, College of Agriculture, Downton, valuation of farm stock.

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Journal of Horticulture.

THURSDAY, APRIL 25, 1901.

Garden or Hall?

Hall and Garden?

OUR Royal Horticultural Society will shortly attain to the honours of its centenary. As a rule the individual centenarian owes his or her extended existence to an uneventful and undistinguished progress through this vale of tears. The centenarian more frequently than not is a pauper. In looking back upon the career of this our venerable and admirable mother-society, the phases of it which strike the imagination are her resplendent youth, her embarrassed maturity, and her opulent age. She may be said to have started by keeping open house for all the *beau monde* and celebrities of the day; later on she found this association expensive, leading to complications, compositions, and what not; and now, wonderful to say, having, unlike the majority of patriarchs, grown in wisdom and sobriety with her octogenarian years, she finds her revenues increasing so inordinately that she can think of nothing better to do with her money than to bury much of it in a carefully concealed garden somewhere in the neighbourhoods of Limsfield or Farningham.

Time was when the fortunes of the Royal Horticultural Society were more brilliant than solid; when the fêtes became the resort of the most fashionable of the *haut ton*, and figured as a conspicuous event of the London season. These fêtes took place at Chiswick, which in those days was more secluded and more rurally environed than now. But whether the metropolis presented fewer distractions than at present, or whether the very seclusion from city turmoil added a charm to the excursion, the fact remains that until perhaps in recent years the glories of the Chiswick exhibitions have never been equalled and never surpassed.

We are all of us only too willing to forget the wretched years of wrangling and impetuosity spent at South Kensington. The

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younger generation of members never knew the miseries of that period, and the older look back to it as to some hobgoblin experience of their early youth. Again and again the most enthusiastic despaired of the life of the mother, and it seemed as if English horticulture would never have a local habitation and a home around which to gather and uphold the lamp of light and leading for the honour of the land.

That we have emerged is due to the skill of some who can still direct the destinies of the Royal Horticultural Society for better or for worse; and none who love horticulture will cease to hope that the good judgment, which has pulled the Society out of the mire, will enable it to take the right turn at this its latest critical point of departure. It is satisfactory to think that the present question has been reasonably debated during the last year, and time given for opinion to mature among the members. Of this we had evidence in the carrying of the amendment moved by Mr. Arthur Sutton at last Tuesday's meeting, which, while not committing the Society to any definite project, corrects the impression that the Council held a mandate to negotiate for the purchase of a new garden. The delay interposed by this amendment will give ample opportunity for discussion, and obviate the risk of precipitate action.

The questions to be decided are—1, What is to be done with the increasing revenue? 2, What is to be done with the garden at Chiswick, the lease of which has yet some twenty years to run? If the exhibitions held seventy years ago at Chiswick could in their day be successful, and a Royal Horticultural Hall is desired, it would surely be better to hold on to what already exists at Chiswick and develop rather than abandon it? London is growing so rapidly that Chiswick Garden cannot fail to be a material asset of yearly increasing value; if the lease of the whole or a portion of it can be renewed. Electrical traction is about to revolutionise London life, and less wonderful things may yet happen than to see the special trains of the Royal Horticultural Society conveying visitors from all parts of London to its summer shows at Turnham Green. Clearly to be successful in any enterprise in these days the public imagination must be captured. Never will the senses of the many be impressed by an experimental garden at Chiswick or elsewhere. Horticulture, like religion, must have a visible temple wherein its beauty is symbolised, and in which its worshippers can unite; and seeing that it is the money of the many which supports all enterprises in these days, the seat of the Royal Horticultural Society should be conspicuous in London where it obtrudes itself boldly to the view of the public of our great metropolis.

Greenhouse Hardwooded Plants.

HARDWOODED plants are at the present time very little grown by the general run of gardeners compared to what they were some fifty years ago. In saying this I refer to such as the hardwooded Heaths, Leschenaultias, Correas, Pimeleas, and Croweas, which were at one time the special pets and favourites of the old school of gardeners. Now at the present day, as I have said, they are seldom grown except by certain nurserymen who make a speciality of them. The softwooded Heaths, such as *Erica melanthera*, *E. hyemalis*, *E. colorans*, *E. persoluta*, also *Boronias*, *Pimeleas*, *Acacias*, *Correas*, and such like can generally be bought cheaper from the nurserymen than the gardener can grow them; still I do not consider this good gardening, and I for one regret that the cultivation of this class of plants has fallen into such disfavour. Still, no axiom contains more truth than that "the old order changeth."

It will be well to consider here what causes have led to the general cultivation of these useful and beautiful plants being discontinued. There can be no doubt that it is principally caused by the greater demand for cut flowers to be used for decorative purposes. I myself have seen a good collection of hardwooded plants consigned to the rubbish heap to make room for the "cut flower" class of plants. And now, although the case may have been put rather strongly in favour of the hardwooded plants, I would not have the reader suppose that I in any way depreciate the extensive cultivation of the many useful and beautiful decorative plants, such as *Primulas*, *Chrysanthemums*, *Cinerarias*, and such like, which are such an important factor in the decoration of our conservatories and greenhouses at the present day.

Before treating of the cultivation of hardwoods it may be well to briefly consider their history as garden plants. As regards their native habitats, they are almost without exception natives of S. Africa, Australia, and New Zealand. If we take S. Africa first, we find that the bulk of the *Ericas* are natives of the Cape, and as early as 1774-76 Francis Masson had collected and sent home a great many; it is also interesting to note that this collector first sent home the progenitor of our Zonal *Pelargoniums*—*P. inquinans*. As regards our first Australian plants, we are indebted to Vancouver's voyage during the years 1791-95, many of them being collected by Archibald Menzies, who was surgeon, and again in Flinder's voyage, 1801-3, when Robert Brown and Peter Good—a Kew collector—sent home a great many plants. Later on we get Allan Cunningham, who collected for fifteen years in Australia; and Drummond. About this time, also, collectors were sent out by some of the leading nurserymen.

Ericas.

If we take the largest genus of hardwooded plants—namely, *Ericas*, we find that there are not so many in cultivation now as there were about the beginning of last century. According to the second edition of Aiton's "*Hortus Kewensis*" (1810-13) there were then in cultivation at Kew 174 species of *Ericas*, while at the present day there are only ninety-two, and part of them are garden hybrids. I may safely say that all the rest are now lost to cultivation, and it is worthy of notice that the sorts that are most grown at the present day are hybrids, such as *Willmoreana*, *hyemalis*, and *Cavendishiana*. Referring again to Aiton's work of the same date, we find that the next largest genus—that of *Acacia*—has risen from fifty-three to eighty-two species.

As regards the propagation of *Ericas*, this is best done about August, or else early spring, the cuttings being inserted in 4-inch pots. These should be half filled with clean crocks to insure perfect drainage, which is imperative, as a stagnant condition of the soil is at all times fatal to the well being of this class of plants. The soil should consist of finely sifted peat and sand, finishing with nearly an inch of clean, sharp sand on the top, the whole being made as firm as possible. *Ericas*, in common with all hardwooded plants, will not root into a loose compost. The small, twiggy side growths should be selected for cuttings, pulling them off with a heel. In trimming off the leaves great care is required, as one is apt to strip off the bark, and this applies to a great many other plants of this class. The cuttings may be inserted half an inch apart, taking care to firm them well. They should then have a thorough watering, and may be placed on a bed of ashes well up to the light, covering with a propagating glass, and accorded a temperature ranging from 55° to 60°. If cuttings have been taken from the cold do not give such a high temperature until they have callused. The glasses should be wiped dry about every second day, and as they will take some six weeks to root, careful attention should be given to the watering, and if they are at any time watered it is advisable to allow them to dry a little before replacing the glasses.

When rooted they will commence to grow a little, whence they may be gradually accustomed to more air, and inserted during August. They should have a light position in winter, being kept well up to the glass. In early spring they should be potted off singly into small pots, and kept growing all summer, syringing them and shutting them up early in the afternoon with plenty of sun heat. They may be twice stopped during the season, this being important if one wishes to lay a good foundation for the future plants. Towards the end of summer leave off the use of the syringe and give more air, which will serve to get the wood well ripened for the coming winter, during which time they should be kept cool and dryer at the root, but on no account should they be allowed to suffer from the want of water.

The following spring they will require a shift into larger pots, using a rougher compost of good, hard, fibrous peat. This is best pulled into lumps, the size of which will be regulated by the development of the plant and the shift it is intended to give. To the peat add plenty of clean sharp sand. In potting, see that the drainage is ample and carefully arranged, covering the crocks with rough fibry peat from which all the fine material has been sifted. It is only by strict attention to these small details that success is to be attained in the cultivation of this class of plants. A special point in potting is to ram the soil firmly, taking care to leave plenty of room for watering, as peat is a thing that is difficult to get properly wet, especially if it has been allowed to get in the least dry. When repotting larger sized plants they should be placed in a tub of water to make sure that the ball is thoroughly soaked. The collar of the plants should be kept well up, as they are very apt to go wrong here if potted too low. This applies especially to the harder wooded section. The above treatment should be followed out each year until such time as one thinks they are fit to flower, and if one wishes to lay the foundation of a good specimen the plants ought not to be allowed to flower for at least three years.—J. COUTTS.

(To be continued.)



Epidendrum x Clarissa superba.

AN interesting report on hybrid Epidendrums was given by Mr. Harry J. Veitch before the Scientific Committee (R.H.S.) at the sitting of April 9th, of which notes will be found on page 333 of last week's Journal. From Mr. Veitch's statements, it would appear that *E. Clarissa* is a hybrid having the admixture of two species (*E. Wallisi* x *E. Endresii*) and two hybrids (*E. Endresio-Wallisi* x *E. elegantulum*). There have been many varieties obtained from the far-fetched *E. Clarissa*, but the finest of them all, so far, is the one we illustrate on this page. At the Royal Exotic Nursery, Chelsea, there are a number of specimen plants of this variety in flower at the present time. The plants have the habit of *E. Wallisi*, attaining about 3 feet in height, and having flowers whose sepals and petals are yellow-tinged and spotted with mauve-purple. The lip is pale reddish violet colour and conspicuous. A first-class certificate was awarded to it on April the 9th, when shown by the Veitchian firm.

Dendrobium Brymerianum.

IN the above we have one of the most remarkable Orchids known, yet one of the freest to flower, and so handsome. The peculiar golden or deep orange-coloured flowers bear fringed lips, which distinguish this Dendrobe from all others. The whole flower is a beautiful orange-golden yellow. Its culture is much simpler than that of many others, and the flowering period ranges from February till the present time.

Orchids for Cutting.

MORE and more each year the Orchid enters into all classes of decorative work for which cut flowers are in request. The flowers are so eminently suited for the purpose, by their graceful contour, elegant and striking colouring, and long lasting qualities, that they will doubtless be even more drawn on, especially if, as seems likely, the plants of ordinary species and varieties become cheaper. Time was when they were the pets of the rich only; when it was rare to see one used as a buttonhole flower, and when their culture was believed to involve a great deal of mystery. But all this is changed for the better. The plants are very moderate in price, the flowers are to be seen in every good florist's shop, and, thanks to the light that has been thrown on their culture by the horticultural press, all classes of gardeners, amateur and professional, can, and do, cultivate them successfully. And there is a decided gain in cultivating these plants for cut flowers over growing them for a display on the plants. When the flower has reached perfection it is removed, and the plant is relieved of the strain of sustaining it. Besides this, the plants are not stood about in draughty rooms, or kept in an unnaturally dry atmosphere, in order to conserve the blossoms, all of which is detrimental to them.

While almost all Orchids are more or less useful for cutting, there are some that are better than others; those mentioned below are all good, and if a few plants of all are grown there will not be a week in the year when none are in flower. In the dead of winter we have the deciduous *Calanthes*. In this section the hybridists have given us some grand blossoms, larger and richer in colour than the older well-known forms, but these, of course, are not all of them plentiful enough to be grown in quantity. The old hybrid *C. Veitchi* is a host

in itself, and should be grown in company with *C. vestita*, both the red and yellow-eyed forms. The variety *gigantea* flowers later than the type, and is more nearly evergreen, while the true evergreen species, such as *C. veratrifolia*, though not so useful as the deciduous ones, often flower in early autumn, at a time Orchids are scarce.

Of *Cypripediums* there is an endless variety, both of species and hybrids, and any attempt to pick out the most useful would be misleading. The Old World sorts, such as the *insigne* and *barbatum* groups, produce perhaps the largest number of blossoms, but those of the South American tropics are often brighter in colour and keep up a longer display. *Coelogyne cristata* is one of the very finest of all Orchids for cutting and thriving well in a cool house, and of very easy culture when established. The long graceful racemes are most beautiful for dress sprays, the pure white of the flowers being well shown up by the dense yellow of the centre of the lip.

There are those *Dendrobiums* that seem to stand out prominently as Orchids for cutting. *D. nobile*—perhaps the most useful of all—that flowers in spring; *D. Dearei*, a charming white flowering species, that is usually at its best in late summer; and *D. Pinalenopsis*, the grand autumn and winter flowering Moth *Dendrobium*. But these are by no means all the good things this favourite genus contains.

Quite a large number of the hybrids, such as *D. Ainsworthi*, *D. splendidissimum*, and others, are every year becoming cheaper. The deciduous species are best represented by *D. crassinode*, *D. Wardianum*, *D. Bensoniæ*, *D. Boxalli*, *D. Pissardi*, and *D. Devonianum*, a grand half-dozen, while of evergreen sorts *D. thyrsiflorum*, *D. chrysotoxum*, *D. fimbriatum*, *D. densiflorum*, and *D. Farmeri* are showy and useful.

All the better known labiate *Cattleyas* should be included, beginning with the old autumn flowering species, and following in their order through *C. Trianae*, *C. Percivaliana*, *C. Warneri*, *C. Lawrenceana*, *C. Mendeli*, *C. Mossiæ*, *C. gigas*, *C. Dowiana*, and *C. Gaskelliana*. There is not a poor one in the list, and by its aid the whole year will be graced by, their lovely flowers. *Lælias* are not less beautiful than their congeners just named. All the Mexican species are excellent, especially *L. anceps*, *L. autumnalis*, and the fine *L. majalis*, the Mayflower. In the Brazilian set we have the gorgeous *L. purpurata*, *L. elegans*, the refined *L. crispa*, and those pretty orange scarlet flowers *L. cinnabarina* and *L. harpophylla*.

Bright golden yellows abound in *Oncidium*s, of which such gems as *O. ampliatum*, *O. tigrinum*, *O. Marshallianum*, *O. varicosum*, and *O. crispum* need only be mentioned. Their one fault is that they are too free flowering, and the production and maintenance of the grand spikes is too often the cause of their collapse. Nearly related is the lovely

Miltonia vexillaria, which will soon be delighting us with its bright blossoms, and this leads up to the sister genus *Odontoglossum*, than which there is no more beautiful one in the whole family, or one that contains such a large percentage of good things. So far I have not even mentioned the favourites of many skilled growers, the *Phalænopsis*, or the stately *Vandas*, *Aërides*, and *Saccolabiums*. *Masdevallias*, again, are very showy and bright, and those who may wish to further extend the list will find many good things among the *Phaius*, *Cymbidiums*, *Lycastes*, and *Brassias*.—H. R. R.

What Our Neighbours Think.—Our contemporary, "Le Moniteur d'Horticulture," in a recent issue, refers to the theft of *Odontoglossum Pescatorei* Veitchi at the Drill Hall on March 12th, and brings to notice the loss of Orchids that M. Jules Hye of Ghent sustained at the Temple Show three years ago. Our Parisian friends jokingly suggest that Continental growers of Orchids, intending to exhibit at London shows, should only send imitations (*fac-simile*) of their rarities!



EPIDENDRUM x CLARISSA SUPERBA.

Wild Flowers of Old English Gardens.—VI.

OCCASIONALLY we wonder at the appearance in our garden of some wild flower, otherwise named a weed, for we have noticed it growing about the neighbourhood. The seeds may have been wafted through the air or carried by birds; the plant might be the result of turning the soil over to some depth, for when we dig deeply in a garden or elsewhere, and leave the earth undisturbed, often species come up we would not expect to see. Various theories have been put forward to explain this, but I have never met with one quite satisfactory. Other plants we look for on waste and neglected gardens, though it is curious how they have their preferences. Weeds we call them, yet they have uses, doubtless, and even beauty, perhaps. Rather mossy in its growth is the Procumbent Pearlwort (*Sagina procumbens*). It may show on a city bypath, the grass of some lawn, creep upon an old wall, or wander from pot to pot in a greenhouse. The small cross-like flowers of green and white remind us of the Cress family, but it is a member of the Chickweed tribe. Its stems resemble threads, and the tiny leaves are each tipped with a spine. Upon rockwork a clump of the Pearlwort looks pretty, though it is an undesirable plant as a weed. Hooker declares that our common Spurrey is a great favourite in Holland. True, it is grown for pasturage, since cattle eat it eagerly, but it appears the Dutch also admire its forked head of white flowers, and the circles of slender leaves round the stem. To the English farmer it is an object of dislike, especially from its propensity of scattering the seeds, which gave it the generic name of *Spargula*, and the local one of "Pickpocket" alludes to its rapid increase. Yet Loudon puts it on the list of garden plants of "easy culture," which it certainly is, so possibly in the eighteenth century, when it grew freely about the suburban cornfields, some thought it pretty enough to place in a garden. On northern moors grows the Knotted Spurrey (*S. nodosa*), having erect stem and more showy flowers.

Evidently our ancestors took special note of the shape of a mouse's ear, for it suggested to them a name suiting a number of wild plants in different families. Thus we have the small group of Mouse-ear Chickweeds, of humble growth; perhaps the best known is the field species (*Cerastium arvense*), with large brilliant flowers and powdery leaves; but at a time I was seeking it I found the plant most plentiful upon the old walls of a Kent park. A decoction of it is recommended as a cure for spasmodic cough, and is really efficacious. This may explain its appearance in old lists of garden plants. It was grown to use medicinally; but it might be cultivated for show. A friend says that in some places it is grown on rockwork; or he has seen it edging a border of scarlet *Pelargoniums*. It is a perennial, and may be improved by cultivation. Akin to it is the annual *C. vulgatum*, the Broad-leaved Mouse-ear, which is in some counties a frequent garden weed.

We have had such cold, ungenial weather, with very few breaks, since the new century commenced, that we can quite understand how Tennyson felt in a similar season half a century ago, when it seemed as if "Nature's ancient power was lost," and it aggravated his distress that people "chattered trifles at the door"—as they often will. The Almond, generally a brave pioneer of spring, even in the south has been prevented by the cold nights and easterly winds from unfolding a bud, though March has half gone. Someone, thinking I might find it consolatory to look upon, brought me a branch of the Spurge Laurel (*Daphne Laureola*), obtained in a copse near Maidstone. It is not uncommon about woods; the upright tough branches bear tufts of evergreen leaves, and in March the deep green flowers, with orange anthers, open, and are succeeded by black, very acid berries. Their poisonous nature suggested the popular name, for it is not a member of the Spurge family. Towards evening the flowers have a slight fragrance, which some persons do not perceive. Being one of our few native evergreens, it was transplanted to gardens centuries ago; moreover, after experiment, gardeners found that the Spurge Laurel of Britain could be used for grafting various American species of *Daphne*, *Arbutus*, and *Magnolia*.

At present I think we see more often about country gardens the kindred species, *D. Mezereum*, also called Spurge Olive, the smooth upright stems of which are adorned with pinkish blossoms in March or April; these are powerfully fragrant, but the whole plant has dangerous qualities, like the Spurge Laurel. Yet the scarlet berries are eaten by some birds; occasionally they are yellowish or orange, and there is a variety of the *Mezereum* with white flowers. It is now rare as a wild plant; some think in the olden time it was fairly abundant. Our native Hellebore, poisonous too, and members of another order of plants which contains many suspected or unwholesome species, attracted notice during the Middle Ages, because one or other was thought to be the Hellebore of the Greeks. By its early blooming, the Stinking Hellebore (*H. foetidus*) or Bearsfoot, takes rank amongst the plants which tell us winter is departing, and I have seen fine

specimens taken off Kent chalk, the green and purple panicles being open at the middle of March. Some friends grow it in pots; it is not a bad-looking plant, and evergreen. As to the smell, I cannot say this is very objectionable; the foliage is lurid green, and the fruit is a capsule.

The Green Hellebore (*H. viridis*) is scarcely attractive. This flowers in April or May, but one botanist calls it "handsome," because the golden stamens show up the pale green petals. I have never observed it under cultivation. The Christmas Rose, or Black Hellebore, is an old garden flower, but not British, and another pretty species having crimson blossoms is the *H. orientalis*, also early, from which several varieties have been obtained.

Folks have been out seeking the wild Marsh Marigold in February, but it seldom flowers till March. This season is later probably, though along a garden border it might open sooner than on the cold soil of a marsh. It will grow anywhere with plenty of moisture, and is sometimes put by the edge of a pond or in an artificial bog. A fine double variety has been known for some years, and there is a single variety having smaller flowers. That the species continues in bloom some time is proved by its being mentioned as a customary flower in May garlands; probably it is the "Winking Mary-bud" of Shakespeare. There is no doubt it was one of those sacred to the Virgin Mary, but some people will not touch its flowers now; in Devonshire they call it "Drunkards," and, should you ask why, you are told that if you pick the heads you will get drunk. Apparently the origin of this odd notion was the moisture-loving character of the species.

Another western name for it is Bull-flower, perhaps, says Mr. Friend, a corruption of "pool-flower," but it might be an allusion to the size of the blossoms. Another big Buttercup is the Globe Flower (*Trollius europæus*), with numerous petals, enclosing the stamens and carpels so as to form a perfect globe. It has been grown in London gardens for many years, and was probably brought from the northern hills, where it is common. Scottish folks call it "Luckie Gowan."—J. R. S. C.

Rudbeckia hirta.

THE wealth of late summer beauty and that of golden autumn bring with them no more showy flowers than those of the Rudbeckias, or Coneflowers, whose high-raised centres, in many cases darker than the ray petals, add so much to their beauty. None of these Coneflowers have this contrast of colour between the disc and the rays more strongly marked than *Rudbeckia hirta*, though, certainly, there are a number which have a more cone-like, elevated centre. From the blackness of the disc it bears in its own land the name of Black-eyed Susan, as well as one much less romantic—that of Nigger Head. Its other American popular names are less descriptive of this feature, though some, such as that of Yellow Daisy or Golden Jerusalem, are expressive of the rest of its colouring as displayed by the ray petals. Ox-Eye Daisy carries less meaning to those of us on this side of the Atlantic, who know a white flower by that title.

Rudbeckia hirta is very showy with us when it opens its orange-yellow blooms decorated with a large, almost black, centre, called in the books "purple-brown"—an expression hardly forcible enough to describe what is better called black. In its native country it blooms in May and June, but in my garden it is, so far as I can remember, the end of the latter month or the beginning of July before it blooms even from seeds sown in good time. The specific name of this *Rudbeckia* is derived from its generally hirsute or hispid character, a feature which is very noticeable on the plant as a whole. Its stems are usually simple, but are occasionally branched, and are often tufted. It grows from a foot to upwards of 3 feet high. The thick leaves are either entire, or serrated at intervals with low teeth. The lower and basal leaves are on petioles, but those above are sessile.

It is rather unfortunate that this plant is only biennial, or if sown early, annual in its duration. It is one which we would desire to retain longer in our gardens without renewal. Seeds, are, however, easily procured. *Rudbeckia hirta* is rather widely distributed in the United States and Canada, although it is said only to be native on the western prairies. We are told that it is "a weed" in the eastern States, and it must be a sight indeed to see a mass of its black and gold flowers. It is quite hardy in our climate.—S. ARNOTT.

Flowering Bulbs in Holland.—Owing to the severe cold the crop of Tulips and Hyacinths in Holland, as here, is more than a fortnight late this year. Many tourists were vastly disappointed at Eastertide at seeing only the Crocus fields in bloom. The full blaze of bulbs will not be out until the end of this week. Special arrangements are being made at Haarlem and the neighbouring villages to accommodate the expected flow of tourists who come over in Holland to see the extraordinary flower fields in full bloom.



Tea Rose Ivory.

Amongst the recently certificated American Roses of promise is the Tea variety named Ivory. This originated as a white sport from the Tea called Golden Gate, in the collection of Mr. B. Durfee at Washington. It has been successfully exhibited at Baltimore and New York, and was given the certificate of the American Rose Society at its recent exhibition. According to the report of "American Gardening," this variety also won for the owner the first prize in the open class for fifty blooms of any variety, American Beauty excepted. It has a fairly pure colour, and is in other respects a duplication of its parent.

Planting Roses in Spring.

The method of planting Roses during April and May has much to recommend it, more especially in respect to the more tender Tea-scented kinds. The plants must, of course, be obtained in pots, and will probably cost a trifle more than ordinary dwarf Roses, but there is a saving in the end. It seems impossible to succeed in wintering such superb sorts as Comtesse de Nadaillac, Bridesmaid, Madame Cusin, Madame de Watteville, Souvenir d'Elise Vardon, Niphetos; at least we find too many gaps in the rows of them just now, although the Roses have had every care in the way of mulching since being planted in the autumn. Spring plants in pots does away with this risk, and new growth goes on without any apparent check. We purchase them as young grafted specimens, that is to say, plants which have been grafted in heat during the past winter, grown on, and of course properly hardened, under glass. These we prefer to older ones because they are more free in growth and have not had time to become stunted in any way. We would insist upon the Brier being used as a stock; this seems so suitable to growth in the Tea Rose section. When planted in well-prepared soil new shoots spring up in quantity; they flower early, and, in fact, outstrip Rose plants grown in the more orthodox way by being budded out of doors and replanted. Novelties in Roses, too, are readily purchased in pots at this time of the year, and by doing this we save a season by obtaining a supply of "buds" for working on to the stocks always planted yearly for a few home grown Roses—trees—and to give us the fine maiden blooms which are so prized in competition.

Late Pruning of Roses.

Those who did not prune their trees during the month of March will this season have cause to be thankful, for it was the coldest and most trying period of the winter that has passed. Principally through pressure of other work we deferred this operation, and glad we are that by so doing the lower eyes are still in a dormant state. Probably there is too much stress laid upon the value of early pruning as affecting the time of flowering. I have noticed that in many seasons when we have thought our Roses late, a spell of hot weather brings them out at their normal time, and the dates of first blossoming vary but little. Early pruning causes the growth buds to burst if the weather be at all mild; and when such mild weather is followed by bursts of wintry winds and frosts, as we have experienced late this spring, the growth cannot be other than crippled in its infancy. Of course when Roses are cut late there is danger in loss of sap, yet this danger appears to us easily enlarged. There are a few deaths among our fresh planted stock; this seems inevitable, however much care we take. Until Roses can be taken from the ground with a ball of earth attached there will be a proportion of losses.

Mildew on Roses Under Glass.

A cultivator who can keep the leaves free of this has little trouble to succeed with pot or planted Roses under glass. But when once

mildew is allowed to get the upper hand the chances of nice flowers become limited. The causes of this disease are, generally, a too dry atmosphere and cold draughts. Care, therefore, is necessary in giving air to the greenhouses. I would keep the ventilators quite closed, except when the outside air is soft and warm. Frequently we notice those who have mildew on the Roses go the wrong way to prevent its spread. Flowers of sulphur is scattered abundantly as a cure. This is all very well in its way, but a better mode is to apply more water and less air. Not only is mildew less rampant in these conditions, but green fly does not flourish under the treatment.

I well remember forcing Roses in a structure that had no ventilators to open, so that no air, only what passed under the glass, reached the Roses. The temperature was cooled by frequent watering of floors, &c. The house was made so that the sashes might be removed after flowering to harden the wood, and an ideal place this was. Blooms were cut by the hundred, and mildew was unknown. Growing Roses with other plants is, I know, a different thing; still, cold air may be avoided by not opening the front ventilators, the top as well being intelligently handled, in accordance with the outside weather.—H. SHOESMITH

Trained Roses in France.

French Rose growers have a characteristic method of growing some of the climbing kinds. The plants are placed in the beds, and a framework of bamboo canes set behind them, so that the shoots are spread outward, almost fan-shaped. When the work is carefully done very little of the frame is visible. To those who have space, says "Meehans' Monthly," this system of growing some of the lovely climbing kinds, especially the yellow and copper-coloured sorts, may be recommended.

The King and Windsor Rose Society.

It is announced that the King has become the patron of the Windsor, Eton, and District Rose and Horticultural Society, of which the late Queen was patroness for some years. His Majesty has also subscribed to the funds of the society, whose annual shows have latterly been held on the slopes at Windsor Castle.

Stambridge and District Rose Show.

Committees and secretaries of Rose shows are at present active in improving, arranging, and issuing their prize schedules for the coming season's shows. From Rev. F. R. Burnside we have received an unpretentious little schedule of a Rose Show which he has been instrumental in establishing at Stambridge. The exhibition has been fixed for Wednesday, the 10th of July, 1901, in the Rectory Grounds, Great Stambridge,

Rochford, Essex. There are altogether seventeen classes, the first being devoted to nurserymen, and asking for thirty-six blooms, distinct, for which the prizes are £3, £2, and £1 respectively. In the other nurserymen's classes good prizes are offered, and equally good in the larger classes open to amateurs and gardeners. The Stambridge and District Rose and Horticultural Society is affiliated with the National Rose Society. We hope this first show may be successful and encouraging to its promoters.

Mearns Rose Show.

We acknowledge the receipt of the prize list offered for competition at the annual display of Roses, to be held in the Public School Rooms, Newton Mearns, N.B., on Saturday, July 20th. The competition is open to the United Kingdom, and the great trade growers of Scotland, England, and Ireland are expected to compete. The men of Mearns are fond of England's emblem, and are, too, good growers of "the chaste flower." The secretary is Mr. Neil Russell, Prospect House, Newton Mearns.

Roses at Thornton Heath Show.

In the schedule of prizes offered for competition at the first summer show, to be held on Wednesday, July 10th, 1901, in Thornton House Grounds, London Road, a number of special classes are arranged for Roses. Indeed, Roses are to be made a speciality. The Thornton Heath and District Horticultural Society has only newly become fully established, but has already 100 members, and the secretary informs us that there is every indication of their having 500 before July 10th.



DENDROBIUM BRYMERIANUM. (See page 341.)

The grounds for the show eclipse any in the south of England—at least, so the secretary says! Enthusiasm is showing itself already amongst intending Rose exhibitors and the devotees of the Sweet Pea, which also obtains conspicuous attention. Besides Roses and Sweet Peas, there are numerous prizes for other flowers and for plants, fruits, vegetables, and table decorations. Application should be made to Mr. J. P. H. Bewsher, Leighton House, 87, Parchmore Road, Thornton Heath, for any information regarding the coming show.

Sneinton Dale Garden Holders' Protection Association.

Mr. E. A. Merryweather of Southwell lectured on the subject of "Rose Culture" at Sneinton on the 17th inst. He prefaced his address by stating that it was better to cultivate Roses on a sheltered slope. They should be somewhat shaded, but not by tall trees or hedges, because the latter would undoubtedly take up the food and nutrition which was intended for the Rose. The most ideal shade was a wall, but he did not suppose one-tenth of them could obtain an ideal position, and professional growers cultivated Roses very much in the open. It had been thought in the past that it was really necessary to have a heavy soil for the growth of Roses, but he considered that this idea was being much modified. What was necessary was a soil rich in plant food, but which at the same time possessed a certain percentage of grit. Most of the very best Tea Roses grown to-day were from plants on sandy soil. With regard to planting, Mr. Merryweather observed that the true lover of the Rose would not make a mixed border; it was the queen of flowers, and must have a bed of its own. Continuing, the lecturer said planting should take place as early as possible in November. The depth should be as shallow as possible consistent with this point—the juncture between the Rose and the stock should always be from 1 to 2 inches below the soil. Planters should be careful not to double up any of the roots, but make sufficiently large holes, and sprinkle nice soil between them.

Definitions Regarding Roses.

1, *A Bloom or Truss* shall be taken to mean a Rose, with or without buds and foliage, as cut from the plant. 2, *A Good Rose*.—The highest type of bloom is one which has form, size, brightness, substance, and good foliage, and which is, at the time of judging, in the most perfect phase of its possible beauty. 3, *A Bad Rose*.—The following are serious defects in a Rose bloom: faulty shape, confused or split centre, and faded colour; also being undersized, or oversized to the extent of coarseness, or overblooming. 4, *Form* shall imply: petals abundant and of good substance, regularly and gracefully arranged within a circular outline, and having a well-formed centre. 5, *Size* shall imply that the bloom is a full-size representative specimen of the variety. 6, *Brightness* shall include: freshness, brilliancy, and purity of colour.—(N.R.S. REPORT.)

Springtide.

APRIL, when the buds open, gives the most perfect image of spring. Its vicissitudes of warm gleams of sunshine and gentle showers have the most powerful effects in hastening the advent of vegetable life in the northern hemisphere. Hence the season derives its appellation. Sunshiny days, with the delightful flush of early greens and newly opened flowers, constitute realities of unequalled pleasantness, notwithstanding they are frequently overcast with clouds and chilled by rough wintry blast. The first April of the new century was ushered in by raw unpleasant weather, the equinoctial storms in some degree prevailing, and marked by

The sleety storm returning still,
The morning hoar, the evening chill.

The Anglo-Saxons called April *Eoster monath*. The English name *Easter*, and the German *Ostern*, are most probably derived from the name of the feast of the Teutonic goddess Ostera, which was celebrated by the ancient Saxons early in the spring, and for which, as in many other instances, the first missionaries wisely substituted the Christian feast. Adelung derives *ostern* and *easter* from the old word *oster*, *osten*, which signifies *rising*, because Nature arises anew in spring. It is also the season when Christ rose from the dead. In Russia the usual salutation upon Easter Sunday is "Christ is risen." Easterly winds and northerly blasts, prevailed when the sun crossed the line, and long before, intervened to retard Nature. On Palm Sunday the Sallow, with male catkins full of golden dust, and the female in silvery sheen, did not enliven the hedges. Even the Alder trees hesitated to display their black mourning bunches of male and female flowers; while the Hazels, in graceful catkins, looked forlorn. Indeed, at spring-tide, Primrose, Daisies, and March Violets were very sparse,

and Lenten Lilies were unknown, not one flower being forthcoming at the equinox. Truly, Daffodils in bunch were seen long before, but these trumpet flowers do not bear the charm and beauty of those simply growing beneath the cottage garden wall. Bees were slow to venture forth, although the Snowdrops tempted venturesome workers, and not a few hives have been depleted. There was less of "airy ring" in March, and even early April, than usual, though the mellow note of the thrush was heard, and rooks were seen busy in building their nests. In brief, spring came not with the vernal equinox, for though the fragrant Honeysuckle, *Lonicera fragrantissima*, and its close ally *L. Standishi*, had come and gone, the Almond tree did not burst into bloom until Lady Day. Here at last come the flowers—

Violets dim,
Yet sweeter than the lids of Juno's eyes
Or Cythera's breath,

and Nature's soothing music of birds is heard once more in woodland and hedgerow. The snow-white Arabis entices with its sweet nectar the bees which disregard the showy rosy red and the rich purple Aubrietia. The "pale Primrose" peeps beneath the hedges, and decks the grassy bank, while the yellow star-like flowers of the Pilewort enliven the moist banks of ditches. The art of man has changed the wild Primrose into yellow, orange, pink, ruby red, crimson; and even blue, jewels shining in various settings, and anon multiplies these into double flowers. Even the Pilewort or Lesser Celandine has been changed by the gardener's art into white and double forms. Man must also try his "prentice hand" on the Cowslips and Oxlips, originating unnumbered dyes, Nature lending itself to these freaks. Hence we have Hose-in-Hose, Jack-in-the-Green, Galligaskin, and Jackanapes-on-Horseback, and "powdered wigs" are not lacking upon leaves or flowers.

Windflowers, alike in copse and garden, open out in the April sun. The Wood Anemone, spangles our woods with its clear snow-white flowers; while gardens glow with the blue of the Apennines and scarlet of southern France, or more remote Greece. Heaven's blue Forget-me-not comes to charm and welcome the Tulip's appearing matchless in gay colouring, and touching the spring of "thoughts that often lie too deep for tears." Let us note in passing the Hepaticas, the Dog's-tooth Violets in mottled leaves and charming flowers, the curiously attractive Ladies' Smocks, the lovely Squills, and the beautiful yet rank scented Garlics or Alliums. In sylvan glades the Blackthorn blossoms and the birds sing in high concert, while anon

The swallow, for a moment seen,
Skims in haste the village green.

Recurring Aprils in recent years have been noted for fewer swallows, sporting with seeming pleasure in the warm sunshine, but the decimation of flies by art of man hardly accounts for the diminution in their numbers.

Fruit-bearing trees and shrubs for the most part bloom during April, the flowers of which are peculiarly termed blossoms, and form a transient spectacle, beautiful and full of promise. Apricots, though seldom seen, lead the way in blossoming, followed by the Peach, Cherry, and Plum. The Gooseberry and Currant lead off among bush fruits. Judging from the buds and blossom, there is the fairest prospect of a plentiful season; but how often is such promise delusive in nature as in human expectations?

This is the state of man: To-day he puts forth
The tender leaves of hope; to-morrow blossoms,
And bears his blushing honours thick upon him;
The third comes a frost, a killing frost!

Hybernated caterpillars, and others newly hatched, are now abroad. The warblers, or Sylviadæ family of birds, represented by the willow warbler, first to come and last to go from British shores, are now seeking for them. The chiffchaff has a strong penchant for the oakgreen moth caterpillar, and the wood warbler feeds on the "leaf-rolling caterpillars," as does also the lesser whitethroat, or brake warbler. The garden warbler or whitethroat, together with the blackcap warbler, nearest rival of the closely related nightingale in the sweetness of its song, and a migrant into far more northerly regions, follow a like diet. The numbers of smooth caterpillars these and allied insectivorous species of birds devour are beyond human calculation, and certainly our indebtedness is great to birds among the bowers!

Hairy caterpillars also are now plentiful, though the note of the cuckoo has not yet been heard. Thus Nature paves the way for the migration of the birds by providing food on the way and at home for nesting and rearing purposes. The young cuckoos are not reared on hairy caterpillars, as the foster parent, commonly the hedge sparrow, feeds them with smooth and soft food. However, when the young cuckoo is fledged and able to feed for itself, it cavils not at any lingering hairy caterpillar, and thus sharpens its throat for uttering the note so characteristic of this harbinger of spring.—G. ABBEY.

Single Windflowers.

THE Anemone shares with the Violet, the Primrose, and the Daffodil the fortune of being the best liked and most popularly known of spring flowers. Adown in the shady glades of Kent and Sussex, or far north

confines in our islands is in the kept gardens. The illustration shows a few of the many kinds we can have. Chief among them is *A. coronaria* (the largest bloom in the figure), with *A. pratensis*, showing its drooping bud flower on the right; and *A. stellaria* is distinguishable on the left hand top side of the illustration. The lower three, from left to right, are *A. vernalis*, *A. apennina*, and *A. vulgaris*. Each of these choice six is fairly well known; and to the list, of course, a



ANEMONES.

to the woods of "bonnie Scotland," the delightful virgin-white flower form of the Wood Anemone decks and spangles many acres of otherwise naked surface land. Ere the cold bleak winds of March have ceased to rustle o'er the lea or through the coppice, this brave little pioneer of the glorious springtide has reared its 4 inches of modest structure and opened its precious blooms upon a comfortless survey. This is why everybody with a true homeland heart loves the Wood Anemone, the Primroses, and the wild or Wood Violets.

But we have other Anemones, or Windflowers, to employ the fanciful name. We have other Anemones, as I say, from other lands, whose

great many others could be added. For instance, what is there finer in April or early May than a mass of *Anemone Pulsatilla* or *A. fulgens* in the borders or on verdant grass? *A. sulphurea* is a lovely pale yellow variety of *A. alpina*, and is frequently found in rockeries. Amongst other very fine Windflowers are *A. dichotoma*, *sibirica*, *sylvanica*, *montana*, *baldensis*, *alba*, and *blanda*, the latter being certainly one of the best. The six that are figured and the others referred to certainly comprise a very fine selection for any ordinary garden, and these hardy and brilliant little flowers will be found, as a rule, easy of culture.—D.

NOTES & NOTICES

Weather in London.—We have to record the first steady week of sunshine that Londoners have experienced since the beginning of January—to go no further back. Each day since Thursday the 18th has been bright, warm, and breezy, just the sort of weather, indeed, to cause a rush of growth in trees, shrubs, and plants. The aspect of the parks, and of the “oasis” throughout the City, has quite changed, giving us a wealth of flowers and green foliage. Sunday and Monday reached over 70° in the shade, and Tuesday was probably quite as hot. Wednesday, our press day, is again delightful.

Weather in the North.—On the 16th inst. 4°, and on the 17th 5°, of frost were registered, with dense hoar frost. The latter day turned out very fine, and since then, with the exception of Thursday, which was mild and drizzly, the weather has been quite summerlike, with abundance of sunshine and high temperature. Monday, although somewhat duller, was pleasantly warm, with soft west wind.—B. D., *S. Perthshire*.

Fruit Prospects.—Up to the time of writing, the prospects of the fruit crop in the different fruit growing districts of Fifeshire and the Lothians are distinctly discouraging. Early blossoming trees have fared badly from the severity of the weather experienced during the present month, both leaves and buds having time and again been frosted early in the morning and late at night. Apples and Plums promise well, but blossoming is backward even in such sheltered districts as Markinch, and if genial weather does not come speedily the season may be a record in unfruitfulness. Alternately there is a few hours warm sunshine about midday, and then an intensity of cold similar to October or March. Mild, showery weather is much needed to invigorate starting vegetation.—W. L.

The French Bulb Trade.—The French bulb market remains unsettled. The new combination of growers near Tonlon (not as a corporation but attempting united action) have fixed on asking prices some 45 per cent. above the rates of last year. As yet, while the French dealers and jobbers have agreed to act with this association of growers, it is not believed that large buyers either in Germany, Holland, England, or America, have placed any orders on the new basis. Another side of the situation is the fact that the crop is not yet made or known. An abundant harvest of clean, healthy bulbs would no doubt weaken the schedule of prices, while a moderate crop or disease would tend to maintain them. The American buyers naturally hesitate at a jump of 45 per cent. in face of the fact that Romans were hawked through the trade papers at the end of last season at very low prices. The average jobbing contract cost of white Roman Hyacinths in France during eight years past was as follows, in francs, for the 12 to 15 centimetre grade:—1893, 80 francs; 1894, 45 francs; 1895, 73 francs; 1896, 82 francs; 1897, 53 francs; 1898, 47 francs; 1899, 40 francs; 1900, 43 francs.

Prizes for Forestry Literature.—A council meeting of the English Arboricultural Society was held at York on Saturday the 8th inst. Major F. W. Beadon of Huddersfield presided over a large attendance. It was agreed to offer prizes during the current year for the best essays on the following subjects:—1, Trees and shrubs suitable for planting on the east coast of England. 2, Does forestry pay? 3, The botanical description of the more important Willows. 4, An account of measurements and values taken by the essayist to determine the number and value of trees per acre in woods of different ages, and growing on soils that vary in quality. 5, The making and cost of carriage and foot roads, and rustic bridges to carry 10 to 15 tons, with sketches, if possible. 6, The arrangement of estate saw mills, and wood-working machinery for estate purposes. 7, The best means of preserving cut timber for estate purposes. 8, Any notes on forestry. Several places were suggested for the general meeting in August, 1901, and after some discussion it was decided to make Peterborough the headquarters, and visits to be arranged to the woods of the Marquis of Huntley, the Earl of Carysford, the Duke of Bedford, the Hon. C. W. Fitzwilliam, the Duke of Rutland, and the Marquis of Exeter.

Variorum.—It has been stated by an expert that it pays to grow grafted plants of the Rose Niphetos for size and quantity of blooms. * * A seed company in Michigan, U.S.A., have planted about 900 acres of seed Potatoes this spring—rather a big order!

Royal Horticultural Society.—At a general meeting of the society, held on Tuesday, April 23rd, over fifty new Fellows were elected, amongst them being the Duchess of Abercorn, Lady Helen Vincent, Lady Tate, Lord Alverstone, and the Right Rev. the Bishop of Richmond.

A Huge Floral Cross.—Quite the biggest floral cross ever seen in Carmarthen was that which Mr. W. Lickley supplied for the funeral of the late Miss Evans, Trevaughan. It was a subject of general admiration to all who saw it. The cross was 6 feet long and wide in proportion; and was composed of choice white flowers like the Lily of the Valley, white Roses, Hyacinths, Stephanotis, with delicate greenery like Asparagus and Maidenhair Ferns. Though of such gigantic size, the appearance of the whole was pretty and artistic in the extreme.

Bergamotte Esperen.—The following was read by the chairman at the meeting of the Fruit Committee of the Royal Horticultural Society:—“I am desired by the Council to inform you that they have left the confirmation of the award of merit, recommended by this committee at the last meeting, to Bergamotte Esperen Pear, in abeyance, as they would like the committee to have the experience of another season, the past one having been, in their opinion, an exceptionally favourable one for many late Pears, not ordinarily of first-rate merit. The Council do not think that any real injustice will be done to Bergamotte Esperen, even if it prove itself to be all that the committee considered it on April 9th, as having been in cultivation for quite sixty years without obtaining any award, it can afford to wait, and approve itself in at least two consecutive seasons. The Council are happy in being able to approve and confirm the recommendations of the committee in ninety-nine out of a hundred cases, and they trust that the committee will not feel hurt by their exercising what seems to them only a wise caution in the present EXCEPTIONAL instance.”

Hedge-Cutting in Suffolk.—Several correspondents have written to an East Anglian daily paper complaining of the wanton vandalism of tree-mutilation and hedge-clipping. Attention has thereby been directed to a “large and fairly flourishing society, which was started some years ago, one of whose objects is ‘To protect objects of natural beauty from ill-treatment or destruction.’” It is called the Selborne Society. The combined efforts of this society’s members, who inhabit all parts of the country, have resulted in much good. There is at present no branch in East Anglia, but efforts are being made to establish one. “Nature Notes,” a little monthly publication, edited by Prof. Boulger, is the official organ of the Selborne Society.

The Presentment of Kew.—One week of sunshine has unshackled the hitherto retarded forces contained within the organic forms of plant and tree life, and has ushered to our pleasurable review much of the new century’s first array of floral and leaf growth. With the advent of warm south-west winds and sunshine, the Horse Chestnut trees and the Hawthorn bushes expanded their new greenery all in a flush, and the winding-sheets of Daffodils, which until now have cringed and cowered before the coldness and the rain, are spangling over all the grass, while “the jocund company” in many of the beds, as they shake and bend in the breeze, seem so happy that it would but be in keeping with the fitness of things to hear them break forth into song. But the delighted little birds upon the trees are doing that. Kew has quite altered in one week. The visitors have always been able to say that the gardens were neat, if not interesting; now, however, both indoors and out, there are a great many objects of attraction. The Magnolias over on the north side of the lake are in full bloom, and further westward a few early Rhododendrons are opening. The Star Narcissi contrast splendidly with the golden glow of the Whins, under whose shelter they appear. The slender dripping branches of the Babylonian and other Willows by the water’s edge are feathered with a greenness that contrasts well with the robust sward. On the lake the ducks, the waterhens, and the swans enjoy an aquatic carnival. To brighten other sections of these lovely gardens the Almond and Prunus tribe furnish clouds of crimson-pink brightness, and nothing in yellow beats the nuance of Forsythias. The genus homo (which embraces you and me, dear reader) disports its varieties in thousands, and the units of this heterogeneity quite make up for any baldness, a consequent of the lethargic spring.

M. de Loverdo has been commissioned by the French Minister of Agriculture to inspect, study, and report, on the applications of cold to fruit and other agricultural or horticultural products in our own country, in Denmark, and also Germany.

French Horticultural Exhibitions.—Paris, from May 29th to June 3rd, in the garden of the Tuileries. Paris, November 13th, French National Chrysanthemum Society's Show. Bordeaux, November 8th to 17th, Chrysanthemum Exhibition; Montpellier (ditto) October 31st to November 3rd.

Covent Garden.—There was abundance of choice fruits, flowers, and vegetables in Covent Garden Market early this week. Roses, Narcissus, and Odontoglossums were prominent amongst flowers; while fresh Pine Apples, Strawberries, Plums, Apples, Pears, and Grapes were in liberal array in the fruit shops. Young Potatoes, Carrots, and Turnips are plentiful.

Death of M. Maxime Cornu.—At the age of fifty-seven years M. Maxime Cornu, a professor in the Natural History Museum at Paris. He was a member of the Conseil Supérieur de l'Agriculture, past vice-president of the National Society of Horticulture of France, officer of the Legion of Honour and of the Mérite Agricole, Chevalier de la Couronne d'Italie et du Sauveur de Grèce, officier de la Rose du Brésil, Grand Croix de Saint Stanislas de Russie, &c. The church of Saint Médard was too small for the many relations and friends who attended M. Cornu's funeral. The sciences of botany, agriculture, and horticulture in France have lost one of the greatest and most persistent adepts who ever spent his energies in the study of them.

Dulwich Chrysanthemum Society.—At a meeting of this society, held on April 16th, Mr. W. Taylor read a most interesting and instructive paper on "Chrysanthemum Potting." In his opening remarks he emphasised the importance of good potting, including the proper preparation of pots, crocks and soil, as the chief factor in the growth of large and perfect blooms. He deprecated the attempt to grow fifty plants where proper attention could only be given to ten. The practice of leaving plants in small pots after they had become pot-bound was a source of many failures, but at the same time no plant should be potted again until it had filled the pot it was in with roots. Beginning with the first shift into a 60-pot, the soil should be two parts loam, one part leaf soil, one part of old hotbed manure, with sharp sand and a little wood ash or mortar rubbish. Take care to warm soil before using. Pots and crocks should always be clean. Place a crock, hollow side down, at the bottom, on which place a piece of moss. Do not press mould too tightly at this stage. Avoid exposing to cold draughts. The next shift will be into 48's or 5-inch pots. Two parts loam broken to size of walnuts, one part broken leaves, quarter part horse droppings, quarter part burnt ballast, quarter part mortar rubbish, and a 6-inch pot of bonemeal to a bushel of soil. Crock as before, and press the soil firmly, using a wedge-shaped stick. The plant should be potted slightly lower than in the previous pot. A further shift into a 6-inch pot is not recommended, it being better to pot the stronger plants in 60's direct into that size for growing in 9 or 10-inch pots, than making a further shift before the final potting. The plants should now be housed in a cold frame or near the glass in a cold house, giving air whenever possible. If green or black fly appears dust with tobacco powder or fumigate with some approved fumigant. Dust the under sides of leaves with sulphur if mildew appears. If the plants fill the pots with roots before it is convenient to give the final shift, liquid manure formed by placing horse droppings and soot in a bag may be given, but not before all the available plant food has been exhausted. Now to consider the final potting. Procure three parts of top spit with plenty of fibre, one part of leaf mould, one part horse droppings, one part mortar rubbish, wood ashes, burnt ballast, road grit or sharp sand, quarter part bonemeal or fish guano, and 1 lb. of a chemical manure. Thoroughly mix the whole, and stand in a heap for about a fortnight protected from rain, when it will be ready for use. See that it is not too wet or dry. Give the plant to be potted a good soaking twelve hours before potting. The crocking should be done carefully, a piece of turf being placed over the drainage, and a layer of half-inch bones on that. Pot in the same manner as in 48's, but ram soil harder. Leave a space in pot of 1½ or 2 inches for top-dressing in August or September, giving same soil with double the manure. After potting, put plants close together for a week or two, and do not water at root for three or four days, but syringe lightly overhead. When root action commences stand in as open position as possible; stake firmly, and stand in a row, firmly tied to two wires stretched between two posts.

Glasgow Potato Trade Social.—The Glasgow Potato Trade held their annual conversazione in the Trades' Hall on Wednesday evening of last week, April 17th. There was a very large turn-out, under the presidency of Mr. Archibald Jackson. The chairman was accompanied on the platform by many of the leading dealers, growers, and gardeners of the Glasgow district.

Edinburgh Notes: A Deal in Rhubarb Roots.—We learn from the "North British Agriculturist" that Messrs. Scarlett of Sweethope, Inveresk, Edinburgh, have purchased from Mr. Stewart, Bangholm, his famous stock of Rhubarb roots, about 60,000, growing on Chancelot. They have also leased the lands of Chancelot. These arrangements have led to an amicable settlement of Mr. Stewart's claim against the proprietor of Chancelot under the Market Gardeners' Act. In point of numbers the above deal is a record in Rhubarb roots in the Edinburgh district.

Appointments.—Mr. J. T. Burditt, for the past four and a half years general foreman in the gardens, Woburn Abbey, Beds, as head gardener to Lord Iveagh, Elveden Hall, Thetford, entering upon his duties on the 8th prox. * * We understand that Mr. Wilkinson, factor to Mr. Graham Hinchison, of Balmaghie, N.B., has been appointed to the management of the St. Mary's Isle Estates. * * Mr. L. Bayley, for the past seven years fruit foreman at Eaton Hall, has been appointed head gardener to Lord Hindlip, Hindlip Hill.

Shading.—As the sun gains more power every day, shading on certain houses will be an absolute necessity. Those who have not the convenience of blinds often have trouble in obtaining a cheap but effective composition—that is, a shading which will remain without further trouble through the summer. It ought also to be removable with very little rubbing or washing. This may be achieved by using the following mixture, and applying on a hot sunny day:—Take a piece of white lead about the size of a hen's egg, and work it down to the consistency of paint by using turpentine; about 1½ pint will do it, but experience will soon teach the right amount. If too thin heavy rains may gradually wear it off. The quantity made will do about 500 to 600 square feet of glass roofing. Wash off with a soft brush after saturating the shading with water; a dull day is much the best for the purpose. This will be found a really reliable shading.—W. H. R.

The Octagons of the Temperate Range at Kew.—The size and shape of the octagons joining the Himalayan house and the central block at the one end, and the centre with the west wing at the opposite end, are such as might lend these parts of the great temperate range for very fine decorative effects or other satisfying purposes. The eastern octagon next to the Himalayan house is chiefly filled with tall, pyramidal, and round-headed standard Sweet Bays in tubs, with here and there a variegated Euonymus japonicus. A nice broad stage borders the inside circumference of the octagons, but the plants that are placed upon these stages are all but hidden from the public view. Many complaints have been from time to time heard on the point that such fine structures and space should be utilised for no other subjects than those referred to. Bays and Euonymus are ornamental plants when properly disposed in the open air garden.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1901.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
April.		deg.	deg.	deg.	deg.	Ins.	deg.	deg.	deg.	deg.
Sunday .. 14	S. S. E.	45.4	42.3	56.3	36.0	0.06	44.7	45.5	45.3	23.6
Monday .. 15	W. S. W.	45.0	39.4	50.0	31.5	0.08	45.4	45.5	45.5	36.4
Tuesday 16	W. N. W.	45.8	41.0	57.3	37.0	0.16	44.9	45.7	45.6	23.3
Wed'sday 17	N.	45.1	40.3	54.1	34.9	—	44.0	45.5	45.6	28.9
Thursday 18	W. S. W.	48.2	47.0	59.4	39.0	—	45.9	45.8	45.8	35.0
Friday 19	S. W.	54.3	46.3	63.1	33.3	—	47.2	46.5	45.8	23.5
Saturday 20	S. E.	59.8	48.5	67.6	41.7	—	49.0	47.2	46.0	32.0
MEANS		49.1	43.5	58.3	37.3	Total	45.9	46.0	45.7	31.1

The first part of the week was showery, the latter part being warm, bright, and more spring-like.

Notes from Highbury.

Highbury, the charming seat of the Colonial Secretary, is sure to prove interesting, but at no time more so, it may be averred, than in the spring. Highbury and Orchids are almost synonymous to gardeners, but of late years, especially, the increasing accession of what may be termed indoor spring flowering plants vie with those aristocrats of the tropics. They are much favoured by Mr. and Mrs. Chamberlain and family, and perfected under the superintendence of the expert head gardener Mr. John Deacon, who in response to my inquiry, "When will be the time of Hippeastrums?" obligingly "post-carded" the reply, "Come any time during Easter Week." The initial inspection was of the inmates of the spacious conservatory adjoining the mansion, and the first object of importance which greeted me was a splendid display of distinctly marked forms, in named varieties, of *Imantophyllum miniatum* in pots, interspersed with a few plants of *Lilium longiflorum*, in the large circular central bed, whilst in front on either side of the doorway opening into one of the principal rooms was a charming arrangement of Crocuses in pots on the one side, and on the other were masses of dwarf and elegant plants of *Freesia refracta alba*. The remainder of the conservatory consisted of such plants as Cinerarias, Azaleas, Carnations, Ghent Azaleas, Lachenalias, bulbs in variety, and other flowers too numerous to mention. Most notable was a tall and magnificent specimen of *Areca Baueri*, occupying the centre of a bed in the middle of the conservatory, and surrounded by fine and gracefully depending fronds of luxuriant specimens of *Phoenix dactylifera* (the Date Palm). The roof and sides of the corridor, represented in the illustration, had recently been repainted, and the climbers, &c., had also been subjected to a severe pruning back, but were more or less again bursting into their garb of vernal foliage. The view during summer is, however, very fine indeed, and the photograph bears out this statement.

Entering the Hippeastrum annexe, where the enthusiastic and special cultivation given by Mr. Deacon, who himself elected to have sole charge of these plants, from the cross-fertilising up to the flowering state, including, also, their state of rest, was admirably displayed in the splendid plants to be seen here. A span-roofed house was devoted to their cultivation, and the writer was privileged to inspect its inmates, ranging from hundreds of embryo seedlings up to the present efflorescent stage of the older bulbs. Many of these bid fair to eventuate into something of extra excellence, and one bold truss was expanding four or five bright and well-formed flowers, but sometimes it takes several years to rectify and fix them, as with the florist's Tulip, for instance.

But *revenons à nos moutons*—the established varieties. One of the most attractive varieties that met the eye was the splendid James H. Veitch—a worthy form bearing a worthy name—with its handsome shape, vivid crimson colour, and broad, overlapping segments—surely the acme of perfection, at least for the present time, though rivals are not wanting. It is a two flower to one spike variety; but what is lacking in floriferousness is compensated by quality. Amongst other new or rare varieties we noted such as Sir William, a rich crimson coloured flower, very fine; Charles II., a Highbury seedling; Idol, bearing four flowers each to the two spikes; Warrior, with a beautiful white striped flower; Melpomene, another splendid striped variety; Ignacite, also with a grand striped perianth, with creamy centre, feathered with soft scarlet; Petronel, an exquisite crimson rose; Lord de Winton, a superb crimson coloured flower; Ajax, a perfect shaped flower, of a brilliant scarlet striped with white; Ægeria, a pretty and large variety, with a pale red coloured flower striped with white; and others. Warrior also claimed attention by its grand perianth suffused with intense scarlet, and Duke of Buckingham (one of the Highbury seedlings), with its bold flowers of brilliant scarlet, completed a few of the most conspicuous varieties then in flower. The Gesneras were seen here in Al form, and these, by the way, do not receive the amount of recognition their merits claim for them, from the decorative plants grown; and what is more beautiful in the autumn than well grown plants of the splendid old *Gesnera zebrina*, with its bright scarlet and yellow flowered panicles and richly marbled foliage? This is now known under the generic name of *Nægelia*.

Proceeding onwards we noticed in the next house, suspended overhead, one or two wicker baskets containing plants of the too little cultivated *Oxalis rosea*, with its beautiful bright rosy, drooping flowers, as if vying with the neighbour, a batch of *Begonia Gloire de Lorraine*. If Mr. Chamberlain's desire is to strive to eliminate the "green" from the Hippeastrum, on the other hand he is metaphorically recognising it in thus cultivating the Shamrock. Cinerarias are exceedingly well grown at Highbury, and a houseful of Sutton's noted strain, with a batch of the stellata varieties, afforded a pleasing contrast. The stellated varieties are certainly worthy of extended cultivation, and they possess the advantage over their compeers in the cut flower state, moreover last several days when thus utilised. *Begonia Gloire de Sceaux*, with its bold, erect panicles of bright rose pink flowers, and bronzy-metallic leaves, was a most striking feature by itself; but the presentment of these was, if possible, enhanced by the canopy of *B. Gloire de Lorraine* in delightful contrast, though considerably past its best condition. Lack of memory had almost omitted from the foregoing category of "sights for sair e'en" one other house filled to repletion with a brilliant show of bulbs, such as Hyacinths, Tulips, Daffodils, fine Mignonette and Lachenalia tricolor,

with such as Indian Azaleas at the far end of the house, completed the floral picture. The bulbous flowers were arranged in individual masses, hence proving more effective than the usual indiscriminate arrangements frequently seen elsewhere.

A fine and healthy batch of Show Pelargoniums also, a peep at the large stock of Carnations of the Malmaison and other sections, cultivated under the special attention of Mr. Weaver, the experienced plant foreman, gave a forecast of treasures to come. A glimpse inside the Rose house revealed a lovely scene of healthy plants and fine blooms, and which are daily laid under contribution in the cut state, not the least conspicuous being two or three roof-trained plants of the good old Gloire de Dijon in exquisite colour and profusion. A run round the pleasure grounds disclosed the fact that sundry alterations and improvements during the past winter had taken place, including also extensive preparations, such as repuddling and the cutting away of excessive, overgrown, waterside vegetation for the reception of a collection of Marliac's Water Lilies, completed one of the most delectable visits to Highbury, by—W. G.

Societies.

Richmond Horticultural.

This well-known society is again adopting an active and progressive policy in regard to its annual flower show. Last year the Royal Horticultural Society's Council and Committees were invited to Richmond, and were treated right royally. This year the National Rose Society will hold its show in the Old Deer Park, Richmond, Surrey, on Wednesday, June 26th, when a large number of visitors and exhibitors is anticipated. Between the two societies about £300 will be offered in prize money, so that there is sure to be keen competition. Schedules have already been sent to former exhibitors, but the hon. secretary (Mr. C. R. King, 61, George Street, Richmond, Surrey) will be glad to post copies to other intending exhibitors for the June show.

Croydon and District Horticultural Mutual Improvement.

A meeting was held in the society's room at the Sunflower Temperance Hotel on Tuesday evening, April 16th. Mr. W. J. Simpson presided. Orchids formed the feature of the evening. The chairman introduced Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Cambridge Lodge, Camberwell, who gave a most valuable and practical paper on "Cypripediums." At the close, and on the proposition of the chairman, supported by Mr. Turney, a unanimous vote of thanks was accorded Mr. Chapman. The lecture was illustrated with about fifty paintings by Miss N. Roberts, artist to the R.H.S., and kindly lent by the artist and R. I. Measures, Esq., to whom the society's vote of thanks was accorded. Mr. W. E. Humphreys, gardener to A. H. Smee, Esq., The Grange Gardens, Hackbridge, exhibited a beautiful group of Orchids in flower, including *Cattleya Trianae* Queen Empress, *Cattleya Schöderæ* Perfection, *Scuticaria Hadweni*, *Masdevallia Shuttleworthi*, *Pleurothallis tridentata*, *Odontoglossum nevadense*, *O. Halli*, *Lycaste Skinneri* bella, *Cypripedium* × *Thomsoni* × *Hookeri*, &c.; Mr. W. J. Simpson, twelve fine flowers of *Cypripediums*; Mr. F. C. L. Wratten, four beautiful seedling *Auriculas*. The secretary, Mr. Gregory, announced that the next meeting would be held at the Art Gallery, Park Lane, May 7th, subject, "Gardeners' Feathered Friends and Foes," by Mr. P. F. Bunyard, Croydon, illustrated by lantern slides by Mr. R. B. Lodge, Enfield.—J. G.

Royal Meteorological.

The monthly meeting of this society was held on Wednesday evening the 17th inst. at the Institution of Civil Engineers, George Street, Westminster; Mr. W. H. Dines, B.A., the president, being in the chair. Mr. W. Marriott read a paper on "The Special Characteristics of the Weather of March, 1901." Nearly everyone will remember how bitterly cold and uncomfortable was the weather of last month, and in this paper the author brought out in a very graphic manner its chief features. From March 1st to the 12th or 13th the temperature was slightly above the average, the prevailing winds being from the south-west, and often strong in force. About the 13th a change set in when north-easterly winds became predominant and low temperatures prevailed. This continued with increasing intensity until the 29th, the last two days of the month being nearly of average temperature. The most remarkable period of the month was the five days from the 25th to 29th, when the temperature was more than 10° below the average all over the country. The north-easterly winds were strong in force, and particularly keen and dry. At the Greenwich Observatory the relative humidity was only 52 per cent. on the 26th, and 54 per cent. on the 27th. The only other instance during the past fifty-four years of as low a relative humidity in the month of March was on March 1st, 1886. In consequence of this keen and cold weather vegetation was at a standstill. Snow showers were frequent, but, not very heavy, except on the 20th in the south-west of England, when on Dartmoor nearly as much snow fell as in the great blizzard of March 1891, and on the 29th, when a very heavy fall of snow and rain occurred in the north-west of England and Wales. Although the death rate was below the average, there was a considerable increase in the deaths due to diseases of the respiratory organs. A paper by Mr. R. Strachan on "Vapour Tension in Relation to Wind" was also read.



PLANT CORRIDOR IN MR. CHAMBERLAIN'S GARDEN.

Broccoli all the Winter.

THERE are not always, perhaps not often, the circumstances permitting of the acquisition of a Broccoli crop all the winter, but the weather of the past winter, and up to the present time, has approached almost the ideal towards that end and for attaining a lengthened supply, at any rate in some districts. Needless to say a selection of kinds must be grown wherewith to keep up a succession of heads, and at midwinter, when frost is threatening and severe, it is not possible for Broccoli to attain to a normal size. For dining-room use, however, this does not so much matter, small ones being more appreciated. For several years it has been an absolute impossibility to maintain an unbroken supply, because frost has inflicted so much damage among them that but a small percentage remained to survive, even among the hardier late kinds. In the winter of 1899-1900, for instance, hundreds were destroyed before the dawn of the new year. Most of the tenderer early sorts were buried in the course of ground trenching before Christmas, and the ranks of later spring Broccoli were seriously thinned.

There has been a few sharp frosty spells during the past winter, but their duration has been short. In some gardens even these have left their mark in the Broccoli plantations, but complaint is not universal. The Self-Protecting and Winter Mammoth furnished a daily supply following the autumn Cauliflowers until the end of January, but in my case the latest portion of these were for safety lifted and stored under cover. Many so treated, however, would have been better left alone could one have had a reliable weather forecast. At the close of this supply there was only a short interval before Walcheren Broccoli was producing small heads; then followed Penzance and Snow's Winter White, two useful kinds when the weather is propitious, but in a severe winter they are invariably destroyed if left outdoors here. Veitch's Spring White, a kind that I always depend upon, and Vanguard, another equally good, kept each other company in their time of maturity, and which extends over three or four weeks. An old favourite, Knight's Protecting, and Main Crop, follow these in their turn, and are joined by Continuity and Leamington. Veitch's Model and Late Queen are so invaluable that their names become absorbed in the annual seed list with a magnetic persistence. It would be a source of concern were they by any chance missing from Broccoli quarters in spring. Miller's Dwarf Russian is a very hardy kind, and so is Bouquet, a name suggestive of its character. They both deserve a place in the most select list for late use.

While concern for the present day's need is uppermost in the gardener's mind, there presents itself the claims of the next year's supply in dual companionship, and a mistake so often made by many is the too early sowing of the seeds. Early sowing of winter Broccoli and Brocole is not so common a practice as formerly; but even now anxiety sometimes asserts itself in the fear of being behind. Of the greater of the two evils, the last named is probably the least, for early sown stock attain to ungainly proportions days, and sometimes weeks, before they can be planted out in their permanent quarters. Time was, and is now, perhaps, when early sowing was necessarily followed by transplanting into nursery beds, to be again lifted and replanted. But what unnecessary labour is thus involved! April is quite soon enough for any of the early Broccolis, and May is better than March for the late ones. By sowing late, growth proceeds steadily, and by the time they are of planting size there will be some ground available for their reception. Late Broccoli is advisedly planted on firm ground, the exhausted Strawberry bed being a favoured site with many. To be able to draw the plants from the seed bed to put out on Strawberry ground imply at once a necessity for sowing at a correspondingly late period. Such sorts as Model and Late Queen can be sown up to the middle of May, and then be in plenty of time. At this late period some care is necessary to protect the seed from birds, which, if they find out and set upon Brassica seeds, they soon play serious havoc. My experience, however, is that birds—and chaffinches are the gardener's worst enemy in this instance—find other food sources about this time, and while in March and April the seed bed must be carefully netted over as a precautionary measure, in May the germinating seeds often go unmolested. This may not be an invariable rule, but it certainly happens often, and is an agreeable relief from the worries so often expected, and unfortunately realised earlier.

It is impossible to draw strong, fully developed plants from crowded seed beds; they are more often thin, lean, and debilitated, and when put out, even on good ground, particularly should the weather be ungenial, they remain stationary, or advance in a very halting manner. On the other hand, plants suitably developed, planted on firm ground, even in droughty periods, grow well, if given water until they have a new root hold. Some advocate digging for winter Broccoli, but my experience is the time is better spent on other work, of which it might be truthfully said there is never a dearth in the summer. Gardens differing in soil, situation, and

shelter, produce varying returns, even with the best of cultivation. I had a good illustration of this last year, in a visit paid a neighbour distant only some four miles away. There the garden was sheltered by high Beech hedges and other trees, and within that enclosure were full crops of spring Broccoli; in this garden, surrounded by walls only, and no other shelter, a large proportion of the Broccoli had gone to furnish root-fool for a future crop, without supplying any material for the kitchen. While my neighbour's plants had to share the ground with the Potato crops in summer and autumn, and which is admittedly not conditions of the best, mine were given a clear course and plenty of room; thus the winter shelter made all the difference, represented in full and partial crops, satisfaction and discomfiture.

—W. STRUGNELL.

Rejuvenating Old Vines.

DURING the latter half of the nineteenth century the quickening influence of commercial methods upset many cherished ideas in regard to Vine culture. The advent of cheap glass induced cultivators to gradually plant Vines on a more extended scale, till in not a few instances growers could be found who annually produced Grapes by the ton. Cultivators of that type were not contented to wait long for a crop, quick results they would have, hence the express system came into vogue; the Vines were cropped to their fullest extent for a few years, then uprooted, and young ones planted to take their place. All things considered, such a course is perhaps the best one to follow in regard to "manufacturing" Grapes for commercial purposes. In some large gardens where the vineries are numerous a similar practice is also followed with good results; in others of less pretension old Vines have still to be retained as long as they can be induced to bear a decent crop. A regular supply of Grapes is expected during certain months each year, and with only one or two vineries at command the idea of uprooting any of the Vines is one not to be entertained. Fortunately, however, Vines may be kept in good condition for a remarkably long time if proper measures are taken to keep the roots active, and the canes clean and strong. I have seen old Vines, whose record extended over 120 years, still producing good crops of highly finished Grapes. After having been pruned back during a great number of years the spurs become gnarled, unduly long, and often break, and then is the time to set about putting young heads on old roots.

During the present month, when Vines in late houses are sending out their shoots, attention should be given to such matters. If strong shoots near the base of the rods are selected, and trained loosely to the trellis between the old rods, they will, in many instances, reach the apex of the roof in one season. When half-way up the roof I like to stop, remove the laterals which form at the point, and thus cause the main bud to break; this will produce a stronger shoot than the lateral would have done had it been left, and the stopping will cause the lower part of the Vine to thicken considerably. At the autumn pruning such canes may be either pruned to the point where stopping was performed, or a foot or two higher up, according to the strength and ripeness of the cane. Weak shoots should be stopped at an earlier stage to insure that greatest of all considerations—viz., a strong and well ripened cane at the base. In all instances the side growths may be pinched to one joint. By stopping the laterals on the old rods somewhat closer than usual, it is an easy matter to find room for the additional young rods.

Given Vines in fairly good health, the roof of any vinery of ordinary length may be covered from base to top in two seasons with strong canes capable of being lightly cropped along their entire length the following year. After a young cane has been taken from an old one, the majority of cultivators, however, know that the latter usually gets weaker each year if left, and although Grape growers are sometimes tempted to still retain some of the old rods, my experience has taught me that when once plenty of vigorous young canes have been obtained the sooner the old ones are cut away the better. In cases where the rods are rather thick in the first place, it is an advantage to cut out half the old ones after the first year, even if the "youngsters" have not reached the top of the house, as the following year the latter make such satisfactory progress as to amply repay the sacrifice. When the Grapes on old Vines shank badly the trouble may frequently be overcome by the practices above advocated, because of the increased root action thus obtained, but in conjunction with such work due attention to border renovation must be given in order to obtain the best results. I do not mean by this that the roots should be lifted entirely either during the previous or following autumn, as such matters must be carried out with caution, or only stunted canes are produced. If, however, a few inches of the old soil is removed and replaced by fresh, young roots quickly push into it, and "surface" root action is thus encouraged. I am about to begin selecting shoots for "young rods" on old rods still vigorous, but nearly forty years old.—H. D.



Royal Horticultural Society of Ireland.

THE correspondence you have admitted to your columns respecting the etiquette of awarding prize money relates to a difficulty which occasionally crops up, and you will do a service both to exhibitors and managers of shows if your action clears away some of the misunderstanding that has arisen. With regard to Mr. Brock's complaint, providing that the rules that bear on the matter in dispute require that the exhibitor should be a member of the society, or pay an entry fee, it is clear that the initial mistake was made by Mr. Brock in entering his employer's flowers without paying the entry fee, and the society were equally wrong in accepting such entry. With regard to the payment of the prize money, it is the custom of the society with which I am connected to send the cheque to the gardener, but all cups are sent direct to the employer. Judging from the correspondence there can be no doubt about the *bonâ fides* of Mr. Brock, and the best course would have been to have deducted the amount of the entry fee when sending the cheque. It cannot, however, be too clearly understood, that the exhibitor, and not the gardener, is entitled to the money. The courteous letters of the secretary of the society seem to show that the Council were anxious to do what was right, whilst those of Mr. Brock assume a lofty and, in some cases, false position. I should have thought that his position as a member of the Council would have made him decline, much less expect, any exceptionally favourable treatment. Unless the rules of the society are different to those of all others with which I am acquainted, it would be interesting to know how the qualification of his employer to compete existed in Mr. Brock's membership, as he says it does. He claims as his employer's trusted agent in the transaction to stand, as it were, in his employer's position. But do the rules of the society acknowledge any agency? Or has he yet to learn the wide difference there is between a servant and an agent?—EDW. HARLAND.

Potato Vagaries.

THE two notes on Potato peculiarities in the Journal, page 258, signed respectively "Subscriber" and "W. R.," have set me, and I daresay many another old Potato grower, a thinking over the many vagaries they can remember in their Potato experiences. Every grower of them has in his memory numberless instances as to their peculiarities in production, quality, and soil likes and dislikes; and it is when adverse influences are thrust upon us, as in the case of your two correspondents, we take the lessons hardly, and as we are injured by them we kick, and we sternly set ourselves to find out the reason and the remedy. Perhaps it will be best to just look at the two notes, and on comparing them we find a strong family likeness between them. "Subscriber" complains of the earthy flavour and smell of his offending Potatoes, Snowdrop and Up-to-Date; and "W. R." of the soapy and insipid characteristics of his Reading Russet and Saxon, and this much to his surprise and regret, because previously at another place these two had been so excellent in every way. One answer will cover both cases, at least I think so; and that answer is (and may I beg the editor to ask the printers to put it in italics for emphasis?), *No Potato with American blood in it (using a breeder's expression), whether it is a hybrid, or a hybrid of hybrids, will come of high quality as to composition and flavour from off strong, clayey, or close-holding land.* There now! I may be pulled over the coals, and that very roughly too, as to this conclusion of mine, and many will no doubt try to show me how wrong I am. I do not mind; I speak that I know, and that I have proved over and over again by actual experiment—yea, experiment after experiment, and many of them to my great loss and detriment.

I am not clever enough to discuss soil constituents or the chemical analysis of soils, these are beyond me. I simply declare that I have come to my conclusions from practical trials of various kinds of Potatoes on soils widely differing from each other, and that the results of those trials have made my conclusions facts, absolutely facts to me, and

Facts are chiefs that winna ding,
And darna be disputit.

I'll just give one instance. After Early American Rose Potato came out I got it. My garden was then a strong holding loam with clayey subsoil; it had been well worked, and would grow anything. I had a beautiful crop, and was delighted. Sent some in at once for the master's table. Next day my delight ended. "Pray don't send in any more Potatoes like those you sent yesterday; the master says they are more like a Jerusalem Artichoke than a Potato." I tried them myself; it was so. Well, here was a stern and severe lesson; it staggered me. Now the after effects, which by the way will suggest the remedy to

"Subscriber," and be a hint to "W. R." I had a cottager neighbour who was very fond of Potato growing, and with whom I compared notes on Potatoes as well as other things. I was telling him of my bad luck and loss, and he said, "I think I should like to try them." "You shall have the lot," I said; and he had. Next season, at lifting time, he sent me word to come and see him. I went, and saw what were to my eyes some of the brightest looking, clean-skinned, even-sized Potatoes I had ever seen. "There's your American Rose," said he; "and now come into the house, and the wife shall show you some we had left from dinner." The good wife smiled when asked to bring forth her vegetable dish, but did so, and in it were the remains of fine, white, soft-fleshed, but dry and mealy Potatoes of beautiful texture and flavour, and my cottager friend said, "If you were not satisfied, I am."

What was the cause of this difference? The cause was, so it appeared to me—and it has been confirmed in my mind many times since—my friend's Potato ground was on dry sandy land, with a gravelly subsoil. It lay full south, and would be a veritable frying-pan in a long hot summer; but there lay the secret—light open soil, I say again, so it appeared to me. In the south, on their lighter and hotter soils, the "Americans" do well, but on the stronger clayey lands of the Midlands and the North they are, speaking generally, a failure. But, it may be argued, one instance is scarcely sufficient to justify your very general conclusions. Very well; here is another. Sutton's Red-skinned Flourball, on first coming out, went through precisely the same round; it was planted, and gave a fine crop. But it was "soapy and insipid," as "W. R.'s" two sorts, so I passed it on to my neighbour, with the result not quite so exhilarating, but still satisfying.

I could go on, giving instance after instance, but my space is becoming exhausted, and if I am left alive after the overhauling in prospect for me, I may go into the subject again. Now I leave it.—N. H. P.

Scarcity of Journeymen Gardeners.

THE point so ably presented by your correspondent, who signs himself "One Who Has Been Through the Mill," is one which must be of interest to all gardeners, in fact it is a question to which few thoughtful gardeners have not given some consideration at one time or another. Why are gardeners' wages so low? That they are low in comparison with those in other trades is unquestionable; that those individuals engaged in many other callings requiring less skill, a shorter time in which to attain proficiency, involving less responsibility, and in which the hours worked are generally shorter, can earn two and three times as much as the best foreman and journeymen gardeners, is a matter of common knowledge, but the reasons for this state of affairs, though often discussed among gardeners, are probably somewhat complex, and no complete and satisfactory explanation seems to be so far forthcoming. It seems as though, while in most mechanical trades, at any rate, wages have increased by leaps and bounds of late years, those prevailing in the gardening world have remained pretty nearly stationary, and the cause of this is often said to be the absence among gardeners of a union fixing the standard of wages, as in the case of bricklayers, plasterers, and most other trades, and that while only a certain proportion of beginners are allowed by the union to learn these trades, there is nothing to prevent anyone who likes from picking up as much as he can of the gardeners' art, and becoming skilful in it. This system, encouraged by the trades' unions, though successful as far as keeping up wages is concerned, seems as though it must in time, by limiting competition, and giving a good worker no more encouragement than an indifferent one, have a deteriorating effect on those trades, for a man who is aware that he cannot with ease be replaced, will not invariably take the same amount of pains with his work as one who knows that there are others ready to step into his place, and most of your readers will agree that it is not considered a point of honour, among gardeners at any rate, to get through as little work in as long a time as possible. Perhaps another reason is that until recently many have been willing to take up gardening as a profession in spite of the lower wages, under the impression that it is more respectable and genteel than other trades offering better remuneration, and thus they feel compensated. Whether this is so or not, it must be admitted that horticulture is a more interesting employment than many others that could be mentioned; it is pleasanter, the work is carried out under better conditions as regards surroundings, there is more variety, and it is a calling which will always engage any intelligent gardener's attention for its own sake, in which respect it differs from the dull, endless monotony of some mechanical pursuits. At the same time, if there is, as your correspondent "W. L." says, such a scarcity of journeymen gardeners now, it is probable it will not be long before there is a change for the better in the matter of wages.—A. W. D.

Money Grants to Violet Growers.—The crop of Violets on the Italian Riviera has been ruined owing to the bad season. The growers have all suffered heavy losses, and the Russian General Gorloff (according to a daily contemporary) has sent 150,000 francs (£6000) to the Russian Consul at San Remo, to be distributed among the poorest of the peasant growers, in order that they may not be discouraged by this season's failure, and to help them towards a better crop next year.

Gadding and Gathering.

"HERE AWA', THERE AWA'."

The Farningham Site.

WHILE gardeners in general have much to do with sites (and sights) which more or less apply to their own local spheres, the Farningham site proposed for a new garden of the Royal Horticultural Society is one which doubtless engages some attention from all active-minded Adamites at the present period. It will be remembered that a notice was published from the R.H.S. headquarters appointing a special day, place, and hour of meeting for Fellows to journey down to the Kent-land to view the new site. The day and the hour came, and fifteen earnest "Royalists" met at Victoria Station, the London terminus of the South-Eastern and Chatham Railway. The day was exceedingly pleasant, and though the journey consumed exactly one hour and three minutes, the time was enjoyably passed. A party of horticulturists passing such scenes as fields of sprouting Hops, old and new orchards, market gardens, and woods adorned with thousands of little white Anemones, are never at a loss for conversative matter. The latest successes with Hippeastrums were discussed by Captain Holford and Harry J. Veitch, Esq., than whom probably no two gentlemen have better collections of these plants. The superintendent from Chiswick Gardens was retailing to the fruit experts the dates on which this or that variety of Plum or Peach had opened its flowers, and the hardy plantamen in their turn waxed eloquent over their favourites elect, and rambled back to the histories of past-time growers. Such minor matters as international politics, Chinese indemnities, budgets and sugar taxes ne'er bothered the heads of our F's of the R.H.S. The Chancellor of the Exchequer could tax what be liked, and the grumbling could easily be done afterwards; but to consider the pros and cons of this brand new site was a task of importance.

Arrived at the twenty-first milestone from London (Farningham Road station), the party set out and walked the tortuous, hilly road through Darenth Vale to Rabbits Farm. Mr. Wm. Marshall, one of the Councilmen, was in waiting, and soon unrolled a plan of the 48 acres, 1 rood, 2 poles, of nicely disposed land, explaining at the same time any questions that were asked. Test holes had been dug at three or four points over the site, and the ground thus turned-up showed for the most part chestnut-brown loam lying over a chalk subsoil. Narrow gravel seams were indicated along with the loam. Opinions were unanimous that the quality was as good as could be hoped for, and drainage was perfect. Excellent crops of Wheat and Sainfoin covered much of the land. The outline of the area is very regular in shape, longest on the south-west and north sides, and pronouncedly angled on the southward line. The sun strikes the whole surface land all day long, there being no higher ground or sheltering belt of growth on any of the sides. Indeed, the absence of shelter is one of the pronounced disqualifications. High walls, and the north shelter-belt of Beech, which it was suggested, would be planted, might, of course, do a very great deal in the way of protection. The ground slopes partly south-east and partly south-west, and is about 250 feet above sea level. Water, gas, and manure can all be readily obtained. Labour, however, is very scarce in the immediate neighbourhood.

Then the lack of a convenient station will tell heavily if the business of settling the site comes to a poll. The presentment of the natural surroundings is far from satisfactory; in fact, at present they are absolutely ugly. The inspection was over in little more than twenty minutes, and as this happy land was not blest with any refreshment bars, or even a humble inn, the members of the party bore back the way they had come.

Another Site.

Mr. Henry Cannell, however, invited one or two of us to another site on which he had "had his eye," as he said, for a long time. So we bundled into the chaise, and for the next three hours we made an exploration through the backwoods of Kent. Whoever thinks that Kent is one great cultivated garden, thinks wrongly. There are acres of wild scrubland and wild woods. Through these woods or small plantations are narrow cartroads, over which the neighbouring trees and bushes hang their branches. The result is that one has much better stooping and bending exercise in trying to avoid a switch in the face than all Sendow's developers could give. The site recommended by Mr. Cannell lies about one mile across the hill to the south from the Farningham site. The soil is equally good, the position open and sunny, and somewhat more sheltered to the north. Moreover, it is within reach of a light railway that shortly will be built to connect Eynsford with Farningham Road Station. The latter, by the way, is fully a mile and a quarter from the village of that name. Another village lies between, that of Horton Kirby. However, as Mr. Cannell had not made a notice of his site to official quarters, his may probably never come into the reckoning.

At Swanley.

The détour from Farningham, around by Horton Kirby, past the beautiful country seat named Franks Hall, and on to Swanley, was

very pleasant indeed. For the first time this year the bees, both humble and hive bees, had ushered forth on rather feeble wings, and sulphur butterflies were quite common.

This part of Kent is laden with the sweet odour of Wood Violets, which flower profusely on every sunny bank; also of Primroses and Anemones. At Swanley we had lunch, and afterwards made a run through Mr. Cannell's plant houses.

He has some very fine breaks among his Cinerarias. The polyantha varieties have developed enormous flowers, and the petals have become fluted and twisted exactly after the fashion of a single Cactus Dahlia. The type offers remarkable promises, though of course another season will pass before a steady character has been acquired.

The Zonal Pelargoniums, especially the single ones, present a galaxy of such brilliance that one's eyes are troubled if the gaze is long continued. Some of the individual flowers considerably overlap the edges of a man's ordinary watch when the latter is laid upon the pipe of the corolla. Dahlias, to the extent of 30,000 plants in 700 varieties, were being potted up and re-arranged in the frames. Seedling Cactus Dahlias were very numerous. The Rose Queen variety of Primula obconica had spent its flowering season, and seeds are ripening; along with this delightful rose coloured variety we may expect soon to see a pure white one, from the Swanley firm. Abutilons and Streptosolens, in small sized pots, were vigorous and bushy; winter flowering Begonias occupy nearly a whole house, and in other quarters were the well-known Cannas, Myosotis, tuberous Begonias, Fuchsias, and other subjects which the Swanley firm grow so extensively and so well.—WANDERING WILLIE.

Pear Bergamotte Esperen.

The Disputed Award.

The Council of the Royal Horticultural Society did not express any reasons for its decision in not upholding the award of merit recommended by the Fruit Committee for this Pear; but we believe the reasons of the councilmen were that they blamed the variety as one that cannot be relied upon for consistent ripening, and growers may not get good eating fruit once in half a dozen years.

One of the best known and most successful of western growers writes thus regarding this Pear:—"I have grown Pear Bergamotte Esperen for some years now, and in its season consider it to be one of our best late Pears; it is a very heavy cropper, and with us of first-rate quality. In confirmation of this I may add we sold our last season's crop at 28s. per cwt., and these were afterwards retailed at 5d. and 6d. per lb. Possibly soil and situation may have had something to do with this. The whole of my trees are of pyramid or bush form, and consequently are growing in the open. There are other trees of this Pear growing some two or three miles from my place where the fruit is equally good."

In reply to an inquiry by us regarding Pear Bergamotte Esperen, Mr. C. Dixon, head gardener at Holland House, writes: "We have no old trees of the variety; the fruits I put before the Fruit Committee on the 9th of this month were from a tree planted in 1892, and from the first crop it had borne, so my experience of the cropping qualities of the variety is limited. It shows no signs of blooming this season at all."

This late dessert Pear, of long proved merit, is often misnamed Bergamotte d'Esperen, as if Esperen was the place of its origin, but it is not. The Pear was raised by Major Esperen at Malines. It is, therefore, Esperen's Bergamotte, or in French, its original and proper name, Bergamotte Esperen. Its origin, about 1830, is recorded in Dr. Hogg's "Fruit Manual," fifth edition, page 500.

It is essentially a late Pear, and as such requires to be grown against a wall in cold or northerly districts. In the South, and far into the Midlands, it succeeds as an espalier or pyramid, also occasionally in favourable soils and sites as a standard. It is prudent, however, to give the tree the benefit of a wall where this is available, as the fruit is so worthy of it. Still a low standard in a garden in Lincolnshire, on the border of the Fens (not a tropical locality), gave excellent crops for years, that ripened so well that there was no difficulty in obtaining a shilling a pound for the fruits when they were in table condition during April and May. The tree had, no doubt, a certain amount of shelter, as it was in the centre of a village, for this Pear did not ripen well with the late Mr. Blackmore from his cultivated orchard trees at Teddington.

Like other very late Pears, Bergamotte Esperen is not generally suitable for that form of tree. It has succeeded as a pyramid in many gardens, and is included in Dr. Hogg's No. 2 list of "twelve select Pears for pyramid, bushes, and espaliers," being the latest in that list—season January-April ("Fruit Manual," edition five, page 671). Trees in those forms would develop fruit in walled gardens, except in cold localities and wet or clayey soils. All the same, a wall is the ideal

position for this valuable late dessert Pear. So good is it that it would be no easy matter to find two better Pears in the month of April.

Bergamotte Esperen has been recently brought into prominence by the action of the Fruit Committee of the Royal Horticultural Society recommending for it, as represented by fruits belonging to Lord Ilchester, an award of merit. Though this recommendation is believed to have been unanimous, the Council of the Society summarily rejected it, and published its condemnation of the judgment of their own experts. It cannot be expected that the Committee will remain silent over this extraordinary, if not unparalleled, rebuke, and further incidents will be awaited.

Under the circumstances it seems desirable to adduce the testimony of some authorities relating to this now celebrated Pear.

Dr. Hogg, after referring to the size of the fruits as "medium, frequently above medium," describes the quality as "quite melting, very juicy and sugary, with a pleasant aroma. A most delicious Pear: season middle of February till April. A fit successor to Winter Nelis."

Messrs. James Veitch & Sons, Ltd., state the Pear to be of "medium size, melting, juicy, and richly flavoured; tree forms a prolific pyramid, and succeeds well on the Quince. Very fine fruits can be obtained on a wall, particularly from cordons."

Messrs. T. Rivers & Son's estimate is, "fruit medium size, a most excellent, hardy, late, melting Pear; forms a handsome prolific pyramid and bush, but deserves a wall in late climates."

Messrs. J. Cheal & Sons put the Pear in their short "select list," and describe it "above medium, Bergamot-shaped; fine grained, melting, and sugary."

Messrs. J. R. Pearson & Sons (not southern growers), allude to it as "fruit above medium size, a good, late, melting Pear; requires a wall, and does not succeed well in cold soils."

Messrs. G. Bunyard & Co., in their catalogues of 1898 and 1899, describe the Pear as "medium: good bearer; requires a wall; succeeds on the Quince; should be carefully thinned, as it bears in clusters." In the latest catalogue of the firm, 1900-1901, Bergamotte Esperen is not described at all. Its name has, accidentally or otherwise, been removed from the descriptive list. It is, presumably, accidental, seeing that at the end of the descriptions "Bergamotte Esperen" appears in a short list of five late "first-class Pears." It is noteworthy that by the omission of the variety under notice from the general descriptive list there only remains one "April" dessert Pear, the two others in the list thus distinguished, Catillac and Uvedale's St. Germain, being stewers. In the opinion of most experts the list would be strengthened by the reinstallation of Bergamotte Esperen. The Council of the Royal Horticultural Society may differ, but there is the somewhat formidable testimony now adduced in favour of this variety.—ON-LOOKER.

At the meeting of the Fruit Committee, held on Tuesday last in the Drill Hall, a disagreeable discussion took place between the two gentlemen who had respectively proposed and seconded the award of merit for this Pear, and the chairman of the Fruit Committee, who, it was alleged, had been instrumental in obtaining the Council's decision not to recommend the award. The proposer and seconder went so far as to resign their seats on the committee unless a compromise was come at, or the award upheld. They afterwards withdrew their resignations.

The chairman explained that there had been not the slightest intention on the part of the Council of casting any disparagement on the Fruit Committee. The Council had had greater time to deliberate on the award, and they had deemed it to be to the best interests of horticulturists not to confirm the recommendation in this case. It was ultimately decided that the Council's decision will hold good for a year, when, if the Pear is again shown in good condition the award will be allowed to stand. This buries the subject for the time being.]

Societies.

Royal Horticultural—The General Meeting.

ANOTHER general meeting of the Fellows of the chief of Great Britain's horticultural societies has to be recorded. The meeting was held, according to announcement, at three o'clock on Tuesday, April 23rd, in the Canteen Room, Drill Hall, Buckingham Gate, Westminster, S.W. Sir Trevor Lawrence, Bart., president, occupied the chair, and nearly every member of Council was present, including Earl Ilchester and Captain Holford, who were recently appointed. Mr. Wm. Marshall was not present. There was no means of making a computation of the number of Fellows gathered, for the room was chokefull, and even half-way down the stairs were Fellows making vain endeavours to hear and see what was being said and done.

Verdict Against Farningham Site.

Prompt to the minute, Sir Trevor rose and called upon the secretary to read the usual notices. These disposed of, he (Sir Trevor) addressed the meeting, saying that he wished to clear up a misapprehension that one or two of his friends seemed to be labouring under. He wished it to be clearly understood that he had no personal likes or dislikes either way, either against or for a hall and offices, supposing these to be within reach of the Society. Probably it would, indeed, be best that the Society should have a hall in which to do its work—(applause).

Sir Trevor went on to say that he had taken the trouble to ascertain if there were any suitable sites obtainable for a hall. Numerous sites had been mentioned, but all of them had been excessively dear. The only one which met with approval was that brought to notice by Leopold Rothschild, Esq., of which the ground rent was £2300 per annum.

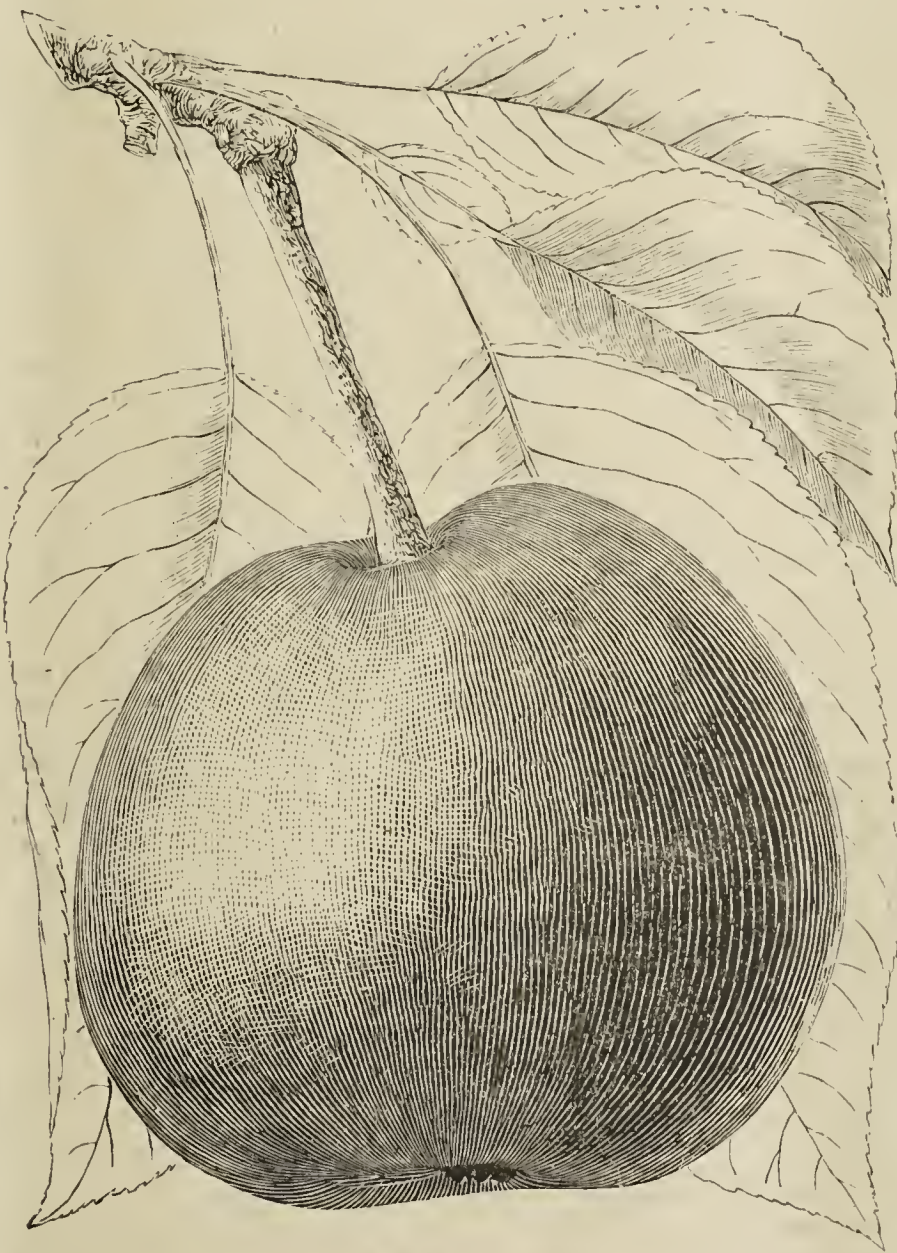
Sir Trevor then directed attention to the position of the Council in the present circumstances. He reviewed the facts that had led up to the meeting of that afternoon, stating that at a certain Council meeting, held during the year 1900, a proposition was brought forward that the centenary of the society (which takes place in 1904), should be celebrated by removing the society's gardens and establishing themselves in a suitable part of the country.

After a little further considera-

tion the matter was put before the Fellows at the annual meeting on February 13th, 1900, in these words:—"The Council recommend the acquisition of a new garden in place of Chiswick as being, *under all the circumstances*, the best and most practical method of celebrating the centenary of the society." (The italics are ours).

Special attention was drawn to this recommendation of the Council, and along with the report was approved and adopted on that occasion without one dissentient voice. Some Fellows of the Society having subsequently maintained that this approval and adoption of the report by the annual meeting was not intended to approve and adopt the Council's recommendation quoted above, the Council again submitted the matter to another general meeting held on April 25th, 1900, when the following resolution was carried by a large majority—viz.:—

That this meeting confirms the recommendation of the Council made to and adopted unanimously by the annual general meeting—viz., that the centenary of the Society be celebrated by removing the gardens from Chiswick, *subject to the Council being able to find a new site which recommends itself to the majority of the Fellows.* (Here, also, the italics are ours.)



PEAR BERGAMOTTE ESPEREN.

It would thus be seen, said the chairman, that the Society decided how it would celebrate its centenary, and

Gave the Council a Mandate

to find a suitable site. This being so, the Council by private inquiry, by advertisements in journals specially affected by land agents, &c., and by application to eminent firms of auctioneers, have, said Sir Trevor, been actively engaged in endeavouring to carry out the instructions of the Fellows. Numerous sites (about fifty) have been proposed; many have been visited, and due consideration has in all cases been given to those sites brought forward for notice.

About Easter of this year, the Farningham site was presented for their consideration, and after having inspected this land, the Council decided that this was far and away the most suitable ground they had hitherto been asked to pronounce upon. Sir Trevor said he himself was laid up by illness at Easter, and so was unable to visit the ground, and had not seen the site at all. He was perfectly impartial in the matter; and the Fellows were simply asked to give their opinion on the subject. If they passed the proposal to buy the land, well and good; if not, the proposal fell to the ground. The Fellows need not think that the Council would take a negative decision as a slight to themselves; this they had no intention of doing. He hoped that the meeting, as gathered, would be able to settle the matter, and so save the trouble of causing a vote of the Fellows all over the country to be taken. The Society was never more flourishing, continued the president, and he thought the Fellows would give the Council credit for having had considerable

Success in the Past,

and would accept the Council's guarantee on the point, that the latter would not put forward any proposal which they had not complete and utter faith in.

Sir Trevor then called upon Harry J. Veitch, Esq., to make a proposal on behalf of the Council. Mr. Veitch (who was Chairman of the Committee appointed by the Council to go into the question of the Farningham site) started by detailing the whole progress of affairs, from first to last. He cited the many disadvantages that Chiswick labours under—the exhausted soil, the excessive drainage, the smoke, and the crowds of surrounding houses. The garden, he said, was utterly inadequate for the Royal Horticultural Society. It was nothing better than a small suburban garden, and certainly no proper trials could now be carried out. The objects of the society were:—1, The promotion of the science and practice of horticulture. 2, The testing of new fruits, flowers, and vegetables. 3, Educational demonstrations. 4, The system of training students. (With their 10 acres at Chiswick they at present can only take a very limited number of students, and many more could be got). 5, The propagation of plants for distribution amongst the Fellows.

Proposals for Farningham Site.

If Farningham site was bought it has been proposed to lay out 40 of the 48 acres as follows:—20 acres for fruit and vegetables; 15 acres for flowering and foliage trees and shrubs; and 5 acres in ponds and rockery gardens. In deciding on a site the Council had deemed it advisable to remove at least twenty miles out of London, and to have access to one or other of the great London railway termini. Sites had been visited at Reigate, Feltham, Slough, Woking, and elsewhere, but there had been serious objections to all of them, and Farningham, the last visited, appeared to his fellow Councilmen as being distinctly the best. It has the advantage of a very full exposure, so that the northern Fellows would have an equal interest in any trials that might be made, with southerners. As regards shelter it is proposed to plant Beech trees on the north-east side, and “while we're sleeping, they'll be growing.” A number of nurserymen have expressed themselves as willing to provide shrubs, and doubtless, added Mr. Veitch, many others would also contribute.

The R.H.S. trials are fully reported in the Society's Journal, and so the lessons of the garden are disseminated abroad all over the kingdom. Should the Farningham site be bought, it is not intended that the whole of the ground would be laid out at once. This would be done gradually, and according as the Society's finances allowed it. For a year or two there would probably be no glass houses raised; but the main thing was to secure the land. It would be a good investment of capital, and would form a valuable, and ever increasingly valuable, asset; for in years to come such land would almost certainly be worth much more money.

Mr. Veitch then turned to the suggestion made by Arthur W. Sutton, Esq., that a hall should take the place of a garden. Mr. Veitch, thought Mr. Sutton's suggestions at this time were rather incongruous, especially as he (Mr. Sutton) had succeeded, while he was a member of Council, in getting a deputation to visit a site at Reading for the proposed garden. Now Mr. Sutton seemed against a garden. The question of refreshments, hotel accommodation, conveyances, the labour problem, and such other points, were brought under examination by Mr. Veitch in a very fair, honest, and able speech. He then proposed

The Resolution:—

That the Council be empowered to purchase for the Society 48 acres of land adjoining Rabbits Farm at South Darenth, in the county of Kent.

The proposition was seconded by Charles E. Shea, Esq., who became immersed in an argument “for” and “against” a hall versus a garden.

Dr. Masters interrupted him on a point of order, but Mr. Shea was allowed to proceed with his expressions. He quoted figures to show the steady financial advance that has taken place each year since 1890—1901. The figures show an enormous advance, and were received with applause. But great as was the sum they had on hand now, it would not go far on a hall. The subject of a hall had been ridden to death, but so far as the funds were concerned, the question, he said, was as dead as a door nail. (Cries of “No!” “No!”) Mr. Shea admitted that a hall was needed, and they would by-and-by have to have one, but not just yet.

The Amendment.

After Mr. Shea had seconded Mr. Veitch's motion, Mr. A. W. Sutton rose to propose an amendment. In a word or two he dismissed what had been said about his proposition of the Reading site. He said that at one of the first meetings he found the Council practically wedded to the Limpsfield site. They asked him whether he had a better site he could suggest, and he only pointed out land suitable for this purpose at Reading. He then expressed his conviction that the vast majority of the Fellows, having had time to consider the matter, do not want a garden at all to celebrate the centenary, but would rather have an horticultural hall. Horticulture could be promoted by their fortnightly meetings, at which may be found the best products from all parts of the country; this, with a small garden down at Chiswick. The Council, continued Mr. Sutton, had laid great stress on “the mandate given by the Fellows,” &c., but “none of us,” said the speaker, “thought we were committing ourselves to celebrating the centenary in this manner.” (Council groans and cries of “Oh! Oh!”). He then proposed the amendment as follows:

While thanking the Council for the trouble they have taken in seeking a site for the new garden, this meeting is of the opinion that the proposed [garden] site is not the best means of celebrating the forthcoming Centenary of the Royal Horticultural Society. Dr. Masters seconded.

The Doctor read extracts from a letter by Sir William Thiselton-Dyer, Director of the Royal Gardens, Kew, from a Fellow resident in Kent, and also from Sir Michael Foster, all of which were strongly in favour of a hall and opposed to a garden.

Fellows Ill-informed of Affairs.

H. J. Elwes, Esq., who next spoke, stated that he was disappointed that the meeting had not had the opportunity of hearing the whole of Sir William's letter. He never had read a fuller or a fairer statement of the case, for the letter described the entire history of proceedings from first to last. (We believe the letter is published in the “Gardener's Chronicle” of this week). Mr. Elwes complained that the whole business had been kept far too secret, and that the Fellows were not well enough informed about the position of affairs. After G. Frederick Roumieu, Esq., Rev. Geo. Engleheart, and N. N. Sherwood, Esq., had spoken in favour of Mr. Sutton's amendment, the chairman put it to the vote, by a show of hands. Mr. Sherwood pointed out that £29,000 had been guaranteed when the hall was proposed and discussed some years ago. If the society could get £29,000 when there was no centenary celebration, what, he asked, would they be able to get now that there is a celebration in view?

£3000 promised.

The mention of money matters for a hall brought Mr. Elwes to his feet, all in a hurry, to astonish those present by a promise of £1000 if a hall was agreed upon. Immediately Mr. Sutton promised another £1000 from his firm, and a third offer of £1000 was shouted out by Mr. Sherwood. The audience laughed long and loud, as well it might do, for here surely was enthusiasm and a good promise for the future hall. On the motion being put, a very large majority favoured the amendment. Nearly everyone rose to go, but the chairman drew attention to bye-law 46, where it states that:—

With respect of any proposal brought before a general meeting, and considered by the chairman, or by a majority of the members of Council present at such meeting, to be of vital importance to the welfare of the society, the chairman may, and (if requested by a majority of the members of Council present) shall (whether a vote shall have been taken or not) adjourn the consideration of such proposal to a subsequent general meeting (to be held within twenty-eight days thereafter), to enable the Council, if they think fit, to refer the decision on such proposal to the whole body of the Fellows, and to take a poll of the Fellows “for” or “against” it; and in the event of such adjournment any vote already taken upon such proposal shall be deemed inoperative, and not to have been taken.

The Council were unanimous that the amendment proposal “was of vital importance to the welfare of the Society,” and had signed their names in favour of calling the above bye-law into requisition. It was strongly hinted, if not absolutely decided, that a poll would be made; and some discussion arose as to withholding the despatch of voting papers till the end of this week, so that the Fellows might be enabled to read the reports from the horticultural papers. The Council pointed out that unless voting papers were sent out immediately there would not be time to receive all the papers and decide before the latest day on which the offer is left open—viz., the 13th of May. We learn, however, that on reconsideration the Council agreed to abide by the decision of the general meeting, as the majority had been so very large. Thus there will be no poll, and in the meantime the matter is in abeyance.

A vote of thanks to the chairman was proposed by Mr. Elwes and seconded by Dr. Masters. The meeting broke up at 4.30 p.m.

Royal Horticultural—The Committees.

Drill Hall, April 23rd.

With the central part of the hall devoted to Primulas and Auriculas, the meeting of the Royal Horticultural Society's committees at Westminster on Tuesday was one of the fullest on record. The Drill Hall was crowded in every part with the usual exhibits of hardy forced plants, Narcissi, and Roses. Orchids were not so liberally staged, though the collection of *Odontoglossum crispum*, from Mr. Thos. Rochford, was in itself a feast. The Fruit Committee had little or nothing before them to make awards upon; but the matter of the award of merit to Pear Bergamotte Esperen, which had been passed by the committee at the meeting of April 16th, and which was not verified by the Council, provided food for a very unpleasant discussion. We noticed Messrs. Barr's attendants wearing the official badge provided to any firm who care to pay a small cost for these badges to the society. They are round in shape, about 2 inches in diameter, with an almost black ground, and the name of the exhibitor is stamped in gold letters on the face of the badge. The badge is worn in the buttonhole of the jacket, and looks neat. Such a distinctive badge saves a great deal of annoyance, and facilitates business.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (in the chair); with Messrs. Alex. Dean, E. Beckett, Wm. Fyfe, J. Jacques, P. Veitch, J. Willard, A. Ward, Geo. Wythes, Jas. Smith, A. H. Pearson, W. H. Divers, G. Norman, Geo. Woodward, F. Q. Lane, H. Markham, G. Reynolds, Geo. Kelf, and J. W. Bates.

Cultural commendation to Apple Calville Malingre from Roger Leigh, Esq., Barham Court, Maidstone (gardener, Mr. Woodward). Vote of thanks to collection of Apples (six dishes) from Messrs. J. Cheal & Sons, Lowfield Nursery, Crawley.

Floral Committee.

Present: W. Marshall, Esq. (in the chair); with Messrs. Chas. T. Druery, H. B. May, H. Leonard, R. Wilson Ker, J. W. Barr, R. C. Notcutt, J. F. McLeod, W. Bain, J. Jennings, Jas. Hudson, C. R. Fielder, Chas. Dixon, Chas. Jeffries, E. T. Cook, H. J. Cutbush, H. J. Jones, Chas. E. Shea, and Wm. Howe.

Mr. George Monnt, Rose Nurseries, Canterbury, showed another fine collection of his Roses. From Messrs. J. Hill & Son, Barrowfield Nurseries, Lower Edmonton, came a choice and varied collection of Ferns, with tinted and coloured foliage. One of the best of these is *Adiantum tinctum*. Messrs. R. & G. Cutbush, Southgate Nurseries, Middlesex, set up one of the most imposing groups of forced Azaleas and the like that the Drill Hall has ever contained. Their crossed varieties from the mollis and sinensis species afford a grand selection of varieties, and it is difficult to choose any half a dozen that excels any of the others. Azalea Fielder's White, and the white *Wistaria sinensis alba*, were very fine. The latter furnishes a splendid standard plant for conservatory at this time of the year. The finest varieties of Azalea were A. Elizabeth, vivid rosy red; A. M. Koster, brick red orange; A. Dr. Reichenbach, orange buff; and A. W. E. Gumbleton, a grand yellow.

Messrs. Carter & Co., High Holborn, London, sent up a very varied group of their "brilliant prize Cinerarias." The size of flower head and of the individual blooms were enormous, and of the finest quality. The crimsons, reds, pinks, and shades of white, &c., were largely included. Messrs. B. S. Williams & Son of Upper Holloway, London, showed forced Lilacs, Negundos, and Hawthorns. From Mr. H. J. Jones, Ryecroft Nursery, Lewisham, came two splendid plants of *Calla Elliottiana* in flower. These were the deepest yellow and of a larger size than any we have hitherto seen. Many people do not seem to know this fine plant yet. *Begonia Gloire de Lorraine* was represented by some two very fine batches of small plants in flower. Tulips and Narcissi were largely shown. Messrs. Frank Cant & Co., Braiswick Nursery, Colchester, showed Roses, of which Princess Beatrice, Bessie Brown, Mons. Bunel, and Mrs. J. Laing were strong and of good quality. From Mrs. Currie (gardener, Mr. A. McMillan), Trinity Cottage, Edinburgh, came a choice assortment of greenhouse Rhododendrons. These represented new crosses for the most part.

Messrs. Paul & Son, The Old Nurseries, Cheshunt, staged Roses in pots. Here was to be seen the new Tea named Liberty, deep crimson; H.T. Clara Watson, and H.T. Vicountess Folkestone. The latter is deep rose flesh coloured, and a grandly shaped bloom. Messrs. James Veitch & Sons, Ltd., Chelsea, had a large collection of forced Azaleas and Hydrangeas on this occasion.

Messrs. R. Wallace & Co., Kilnfield Gardens, Colchester, were forward with a very choice selection of the hardy bulbous and other plants, which they grow so largely and so well; and from Messrs. Wm. Cutbush & Son, Highgate, London, N., came a group of forced *Cratægus*, *Prunus triloba*, Azaleas, *Staphylea colchica* as standards, Irises, &c. Messrs. John Laing & Sons, Forest Hill, Kent, arranged a rather crowded group of forced *Pyrus floribunda*, Lilacs, Azaleas, Deutzias, &c.

Messrs. T. S. Ware, Ltd., Hale Farm Nurseries, Feltham, staged *Primula Sieboldi* in many finely coloured varieties, together with *Pæonies* and Daffodils.

Hardy plants in great and choice variety came from Messrs. Geo. Jackman & Son, Woking Nursery, Surrey. *Kalmia glauca* and many

hardy plants were included. Mr. Amos Perry, Winchmore Hill, London, N., had double Primulas, such as *P. acaulis platypetala plena*, purple; *P. a. sulphurea plena*, Dodecatheons, *Erythroniums*, &c., &c.

MEDALS.—Bronze Banksian to Messrs. T. S. Ware, Ltd., Feltham, for hardy flowers; to Messrs. Hill & Son, Edmonton, for group of Ferns. Silver-gilt Flora to Sir Trevor Lawrence, Bart., Burford, for group of Anthuriums. Silver-gilt Banksian to Messrs. Cutbush, Southgate, for group of flowering shrubs; to Messrs. John Laing & Son, Forest Hill, for group of flowering shrubs and foliage plants. Silver Flora to Mr. W. Ramsey, Waltham Cross, for group of cut Roses; to Messrs. Paul & Son, Cheshunt, for group of pot Roses; to Messrs. James Carter and Co., High Holborn, for group of Cinerarias; to Messrs. Cutbush and Son, Highgate, for group of flowering plants. Silver Banksian to Messrs. Wallace & Co., Colchester, for group of hardy flowers; to H. J. Jones, Lewisham, for group of *Begonia Gloire de Lorraine*; to Frank Cant & Co., Colchester, for group of cut Roses; to Geo. Jackman & Son, Woking, for group of hardy flowers; to Mr. Perry, Winchmore Hill, N. for group of hardy flowers; to B. S. Williams, Piccadilly, for group of forced plants. Silver-gilt Banksian to Geo. Mount, Canterbury, for group of cut Roses.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the chair); with Messrs. James O'Brien, de B. Crawshay, H. M. Pollett, J. W. Odell, E. Hill, W. Cobb, H. T. Pitt, F. A. Reader, T. Rochford, T. W. Bond, W. H. Young, H. A. Tracy, H. J. Chapman, J. Wilson Potter, J. G. Fowley, and Jas. Douglas.

Messrs. J. Veitch & Sons, Chelsea, contributed a small group of Orchids, including *Laelia Latona*, *Laelio-Cattleya Digbyana purpurea*, L.C. *Highburyensis*, and *Cattleya intermedia alba*. Mr. F. W. Thurgood, gardener to H. T. Pitt, Esq., Stamford Hill, staged a group of various Orchids, amongst which were *Cattleyas*, *Galeandras*, *Odontoglossums*, *Cypripediums*, and *Miltonias*. The plants were in most excellent health, and carried splendid flowers. Mr. Douglas, Edenside, Great Bookham, sent superb spikes of *Phaius*, *Cooksoni*, and *P. Norman*.

Messrs. B. S. Williams & Son, Upper Holloway, exhibited Orchids in variety and of attractive quality. The Vandas, for which the firm has long been celebrated, made a conspicuous feature. The Orchids were interspersed with Ferns and yellow Callas. The handsomest plant in the group of Orchids, shown by Mr. W. P. Bound, gardener to Jeremiah Colman, Esq., was *Cymbidium Lowianum*. There were also well grown *Odontoglossums* and others.

Messrs. H. Low & Co., Bush Hill Park, arranged a fine collection of Orchids, including beautifully flowered *Dendrobiums*, *Cattleyas*, *Oncidium concolor*, and others. Mr. Thomas Rochford, Turnford Hall Nurseries, Broxbourne, contributed a splendid collection of *Odontoglossum crispum*. Many of the flowers were large, of fine form, and good colour. The task was to find the poor forms; the good ones were conspicuous. Mr. W. H. White, gardener to Sir Trevor Lawrence, Bart., Dorking, showed half a dozen grand plants, which included *Laelia aurantiaca*, *Dendrobium micans Euryclea*, *Odontoglossum crispum pardalinum*, O. c. *Severisi*, O. *lateo-purpureum hystrix*, and O. *mulus*, Burford variety. De Barri Crawshay, Esq. (gardener, Mr. W. J. Stables), Rosefield, Sevenoaks, staged a small group, amongst which *Odontoglossum Adrianæ Crawshayanum* was superb in form and colouration. There were a few other exhibitors of odd plants of Orchids.

MEDALS.—Gold medal for groups to Thomas Rochford, Turnford Hall Nurseries, Broxbourne. Silver Flora to de B. Crawshay, Esq., Rosefield, Sevenoaks; to H. T. Pitt, Esq., Rosslyn Gardens, Stamford Hill. Silver Banksian to Jeremiah Colman, Esq., Gatton Park, Surrey; to Sir T. Lawrence, Bart., Burford, Dorking; to Messrs. Hugh Low and Co., Enfield; to Messrs. Jas. Veitch & Sons, Ltd.; to R. Brooman White, Esq., Arddaroch. Bronze Banksian to Messrs. B. S. Williams and Son, Upper Holloway.

Narcissus Committee.

Present: W. Bennett-Poë, Esq. (in the chair), with Miss E. Willmott, Geo. Engleheart, W. F. M. Copeland, A. Kingsmill, Robt. Sydenham, P. R. Barr, J. D. Pearson, W. Poupert, S. A. de Graaff, Walter T. Ware, S. Eugène Bourne, John Pope.

There was again no competition for Messrs. Barr's cup. Messrs. Hogg & Robertson, Dublin, staged a large selection of Narcissi, including such fine things as N. Queen of Spain, N. Madame de Graaff, N. Barri Maurice Viluforia, N. Sairley Hibberd, the true maximum, Brigadier, yellow trumpet and creamy perianth; Lady Arncliffe (incomparabilis), deep red orange trumpet and bright golden yellow perianth; and Sentinel, a grand bicolor.

Messrs. Barr & Sons, King Street, Covent Garden, showed Narcissi General Roberts, Weardale Perfection, King Alfred, J.B.M. Camm, Lucifer (a stellate variety with red-orange trumpet and white perianth), Henry Irving, Princess Ida, and host of other choice things, which we had not time to do justice to. Messrs. James Veitch & Sons, Ltd., Chelsea, also had a liberal assortment of Daffodils and Narcissi. N. *Lodia*, creamy white; N. *Erini*, one of the finest of the doubles; N. J. B. M. Camm, creamy white; and N. *incomparabilis Stella* were all of them very beautiful. Messrs. R. H. B. Ltd., The Floral Farm, Wisbech, had a very large assortment of Daffodils and Narcissi. Snowflake, creamy white; Leeds Gem, Humel albidus, Marchioness of Lorne, with long yellow trumpet and slender perianth segments, a good thing, were amongst others seen.

[National Auricula and Primula, April 24th.]

[The Southern Show of this society in the Drill Hall was one of the smallest in its history. The entries, we learned, had been fairly good, but the weather had been so unfavourable to development that many growers were absolutely unable to exhibit. The flowers staged were not nearly so good as we are accustomed to see on these occasions, but this again must be ascribed to the weather. Mr. J. Douglas, V.M.H., Edenside, Great Bookham, was placed first for twelve Auriculas, distinct varieties, with Magpie, Cleopatra, Monarch, Raven, Peri, Abraham Barker, Frances Farmer, Hero, Zola, Acme, George Lightbody, and Perseverance. Mr. W. Smith, Bishops Stortford, was second; and Mr. Purnell Purnell, Streatham, third. The flowers throughout did not reach the first standard of excellence. In the class for six Auriculas, dissimilar, Mr. Purnell Purnell was the only exhibitor. He staged Rev. F. D. Horner, Violet, George Rudd, Col. Champneys, Acme, and Black Bess, for which he was awarded the second prize.]

The prizewinners in the class for four Show Auriculas, distinct, were Messrs. J. T. Bennett Poë, J. W. Euston, Great Gearies; Mr. R. Holding, Birmingham, and Mr. J. W. Bentley, Castleton, Manchester, in the order named. The winners staged R. Headley, George Rudd, Mrs. Henwood, and Rachel. Mr. P. Hemnell, Winchmore Hill, was a good first for two Show Auriculas, distinct varieties, with Hermione and F. D. Horner. The second prize went to Mr. J. T. Bennett Poë, the third to Mr. J. W. Euston, and the fourth to Mr. J. W. Bentley. The single specimen classes are always interesting. For a green edge Mr. J. T. Bennett Poë was first with James Hannaford, and third with Mrs. Henwood. Mr. Hemnell came second, and Mr. J. W. Euston fourth; both growers showed F. F. Horner. Mr. Hemnell was first with a grey edge with George Lightbody, and third with George Rudd. Mr. W. Smith secured second place with the last-named variety, and fourth with Rachel. For a white edge Mr. Hemnell was first, and Mr. J. W. Euston second, Acme being shown in each case. Mr. J. W. Smith was fourth with Mrs. Dodwell. For a single self Mr. J. T. Bennett Poë was first with Black Bess, Mr. Hemnell second with Mrs. Potts, and Mr. A. R. Brown third with Cleopatra, and fourth with John Spaulding. Mr. J. Douglas was first, and Mr. Purnell Purnell second for a collection of fifty Auriculas in not less than twenty distinct varieties. In neither case were the flowers particularly meritorious.

Speaking generally, the flowers were better in the Alpine section than was the case in the show department. For twelve distinct, Mr. J. W. Euston was first with Beauty, Perfection, Halsev, Lord Roberts, Early Dawn, Desdemona, Hector, Julia, Urania, Bellona, Diomedes, and Ruby. Messrs. J. Douglas and Purnell Purnell were placed second and third in the order in which their names are here given. For six Alpines, distinct, Mr. J. W. Euston was again first, staging Urania, Sylvia, Hilda, Ruby, Constantine, and Duke of York (superb). Mr. J. Douglas took second place, Mr. J. W. Bentley third, and Mr. A. R. Brown fourth. Mr. A. R. Brown took the premier place in the class for four Alpines with Miranda, J. F. Threw, Mrs. Garton, and Fred Knighton. Mr. J. T. Bennett-Poë was second, and Mr. R. Holding third. For a single specimen Alpine, gold paste, Mr. J. T. Bennett-Poë was first with Duke of York, and second with Dean Hole. Mr. J. W. Euston was third with the same variety, and Col. Dixon fourth with an unnamed seedling. Mr. J. W. Euston was first for a white or cream paste Alpine with Constantine, and second with Bellona. Mr. A. R. Brown was third with Thetis. Mr. J. Douglas was first for twelve Fancy Auriculas, and Mr. J. W. Euston second. There were some attractive flowers in these stands.

Mr. J. W. Euston was first for twelve distinct Primula species with japonica, j. alba, denticulata, Forbesi, verticillata, obconica, amoena, Sieboldi, rosea, floribunda, decora, and frondosa. Mr. Purnell Purnell was second. Mr. W. Beale was first for six species.

Mr. J. Douglas was first for twelve Fancy Polyanthus, distinct. Mr. Mr. J. W. Euston was second, Col. Dixon third, and Messrs. I. House and Son, Westbury-on-Trym, fourth. Mr. J. Douglas was again first for twelve single Primroses, being followed by Messrs. J. W. Euston and I. House and Son in the order named. The last named was first for six double Primroses. Mrs. K. Hopkins was second, and Mr. R. Staward, Walton-on-Thames, third. Mr. Beale, Hayes, was first for a basket of Primroses and Polyanthus. Messrs. I. House & Son were second, and Mr. J. W. Euston third. Mr. S. Mortimer had, inadvertently, removed his basket just prior to the judges conferring along, or he would probably have been first. He was given an extra prize.

The following two classes were open only to those who had not previously taken a prize. Four Show Auriculas, distinct, first Mr. R. Staward, second Mr. W. Beale, and third Mr. J. W. Bentley. For six Alpines, first Mr. F. W. Price, second Mr. J. W. Bentley, and third Mr. W. Beale. For three gold-laced Polyanthus Mr. R. Dean, V.M.H., was first, and Messrs. I. House & Son second. This position was maintained in the class for a single specimen gold-laced Polyanthus.

Brighton and Sussex Horticultural, April 16th and 17th.

Once more this year we found the spacious Corn Exchange, and the huge space under the dome, filled to overflowing. This particular exhibition had been delayed two or three weeks longer than is usual, but the show was a decided gainer thereby. A stormy morning gave place to a fine afternoon, warm and sunny, and there was a large attendance.

Groups of plants were a good feature, placed round the sides of the

Corn Exchange. In the leading class, Mr. G. Miles, Victoria Nursery, Brighton, sent an arrangement of excellent foliage and flowering plants, which left little to be desired. At the back were some specimens of *Asparagus rigidus*, perhaps *A. racemosus*, certainly a very elegant decorative subject. Mr. Miles stated it did not produce seeds. Palms, *Pelargoniums*, *Arums*, *Azaleas*, &c., were admirably mingled, and the group well finished off. Mr. G. Sims, gardener to E. A. Wallis, Esq., Brighton, was a good second; and Mr. H. Head, nurseryman, Hove, was third. There were excellent groups for gentlemen's gardeners and amateurs, and Mr. F. Rapley, gardener to Miss Visick, Withdean, was first, and Mr. J. Harper, gardener to E. A. Tacker, Esq., Preston, was second. Some pretty groups, occupying limited spaces, were also shown by amateurs in another division.

Orchids form a fine feature, though the space, 4 feet square, is not sufficient to show them off to the best advantage. Mr. H. Garnett was first, Mr. F. Collis was second, and Mr. J. Harper was third. The class for a mantelpiece and hearth, arranged with plants for effect, proved a very successful feature, and Mr. G. Miles was again first.

Hyacinths proved a good feature. The best twelve came from Mr. E. A. Golding, and Mr. F. G. Bunney was a close second. Mr. J. Harper was third. In divisions 2 and 3 there were classes for six varieties. Mr. A. J. Blake, Bleak House, Brighton, was first in the former, and Mr. G. H. Bunney in the latter. Tulips were shown in collections of twelve pots, Mr. J. Harper taking the first prize with good sorts. Mr. G. Short, Preston, was second with much the same varieties.

In the open division such subjects as Lily of the Valley, Freesias, *Lachenalias*, *Mignonette*, and Violets were creditably shown; and amateurs also contributed some of the foregoing in their division. Auriculas and Primroses were all poor, with the exception of six plants of Yellow Queen, shown by Messrs. W. Miles & Co. There was also a class for six *Primula verticillata*, and for the same number of double *Primula sinensis*. Messrs. W. Miles & Co. had the old Double White in very fine character; the single varieties were fairly good. There were some pretty table plants, and some very good Marguerites. Collections of twelve pots of *Narcissus*, exclusive of *Polyanthus* varieties, were in good character. Mr. J. Harper came first with a good selection; Mr. G. F. Bunney was second. In the gardeners' class for six pots Mr. G. Sims was first, and Mr. A. J. Blake second. Mr. J. Harper had the best twelve pots of *Polyanthus Narcissus*, staging them in good character. Mr. G. F. Bunney was placed second.

Some of the finest specimen *Cyclamen* ever staged were seen in the Corn Exchange competing in the class for twelve plants. They were grown and shown by Mr. C. Murrell, gardener to Mrs. Jenkins, Burgess Hill, the bulbs three to five years old, crowded with blooms of a singularly fine character. In addition to the first prize the judge awarded Mr. Murrell a cultural commendation. Much smaller specimens were shown in the gardeners' division. Good *Cinerarias* were also staged, the best twelve being from Mr. C. W. Head; Mr. F. Collis was second. They were also shown in good character in the gardeners' division. Twelve superb specimens of *Genistas*, large, well grown, even, and grandly bloomed, were shown by Mr. H. Head. The Brighton Florists' Stores supplied the twelve plants, even and admirably bloomed, which gained the second prize. *Spiræa (Astilbe) japonica* were in good specimens, so were the *Dielytras*; the best six Show *Pelargoniums* were from Mr. G. Miles. Greenhouse *Azaleas* were in the form of dwarf, well bloomed bushes; Mr. G. Sims was first, and Mr. Geo. Miles second. Mr. H. Head had six good plants of *Azalea mollis*, and Messrs. W. Miles & Co. were second. Another class for twelve bunches of cut *Narcissi* was also in the schedule, the first prize falling to Mr. J. Harper, who had good examples of *Sir Watkin*, *Horsefieldi*, *Nelsoni*, *Major*, *Emperor*, *Golden Spur*, *Albicans*. Mr. M. Tourle was a good second.

Mr. H. Garnett was first with a box of cut flowers in twelve varieties, excellent Orchids preponderating. Mr. G. W. Piper, Rose Nursery, Uckfield, was first with a box of excellent flowers, including the new H.T. Liberty, deep and rich in colour, Mrs. C. W. Whitney, Cleopatra, Mad. Lambard, Maman Cochet, Muriel Grahame, Sunshine, &c. There was also a class for an arrangement in flowers for the centre of a dinner table, in which Miss M. Howell, Queen's Park, Brighton, was first with a light and elegant design.

MISCELLANEOUS EXHIBITS.—In the way of miscellaneous exhibits, Messrs. W. Balchin & Sons brought from their Hassocks Nurseries a superb collection of plants, which occupied a commanding position at one end of the Corn Exchange. The group was made up of subjects some of which are rarely seen at flower shows, and being arranged in panels they were seen to the best advantage. There was a background of Palms, *Lilium Harrisii*, and bright Crotons. In the foreground, occupying the middle, was a group of *Dendrobium nobile*, edged with *Cypripediums*, and *Begonia Gloire de Lorraine* as an edging. One side was composed of some brilliant *Hippeastrums*, then *Anthurium Scherzerianum* and *Tetratheca ericoides* in very fine character, margined with *Primula verticillata*. On the other side was a batch of *Azalea mollis*, one of the yellow-flowered *Acacia cordata*; then *Boronia heterophylla*, the blossoms unusually fine, and an edging of *Diosma capitata*; the front line Ferns and the variegated *Campanula Balchiniana*. There are but few nurseries could furnish such a group as that. By the side of it Messrs. Barr & Sons had a large and representative collection of Daffodils, with various spring-flowering plants. Foremost among the former could be seen Duke of Bedford, a very fine form, the perianth white, the trumpet clear yellow; King Umberto, Glory of Leyden,

Victoria, and other novel and fine forms. Mr. G. W. Piper had one of his collections of cut Roses, arranged in his own excellent way; and it included such novelties as Admiral Dewey, a peach tinted sport from Caroline Testont; Liberty, Sunrise, &c., all the blooms in fine character, and a great source of attraction. Other collections were also staged, including two tables of charming floral decorations shown by Mr. W. Baldock, artistic floral decorator, Brighton.

Manchester Spring Show.

The Manchester Royal Botanical Society held their spring show this year in St. James' Hall, Oxford Street, instead, as formerly, in the Town Hall. The alteration seems to have resulted in an increase in the size of the exhibition, and, generally speaking, an unprecedented success. The most conspicuous feature was the centrepiece sent from the society's gardens, covering an area of 1000 square feet.

It consisted of a magnificent group of plants, having as centrepiece a lordly Palm rising from a bed of Rhododendrons. Viewed from the balcony, this collection had a very charming parterre-like effect, and the representative character of the group is indicated by the statement that it contained specimens of nearly every flower that blooms at this season of the year. A prominent feature of the display was the provision of several circular beds of Azaleas, masses of beautiful yellow and orange coloured blooms, which produced a delightful effect. Daffodils, Tulips, and Dracaenas added to the charm of the collection, the monotony of the outline being broken by choice specimens of the Lily of the Nile, feathery Spiraeas, and rose coloured Liliums, which were all shown in the highest state of perfection. In addition to the central group, the society exhibited a large collection of Lilacs, Palms, and other decorative plants, which formed an effective background to the Orchid display.

One great feature of the show was its abundance of Daffodils, still the most popular of spring flowers. The cultivation of the old familiar Daffy-down-dilly is becoming something of a hobby, and there were some specimens in the hall which were valued at 15 guineas per bulb. There were also excellent displays of this flower from Messrs. Hogg and Robertson of Dublin, Messrs. Dickson & Robinson of Manchester, and Messrs. Dickson of Chester, the collection of the last-named firm including some of the newest as well as the older varieties. Mrs. R. O. Backhouse of Sutton St. Nicholas, Hereford, who was awarded the first prize for the best amateur collection of Daffodils, included in her specimens a fine example of the flower known as Weardale Perfection, notable for the great size of its petals. The Orchids completely filled one side of the hall, among them being the fortnightly display of the North of England Orchid Society. The winners of gold medals for Orchids were Messrs. Cowen of Liverpool, Messrs. Charlesworth of Bradford, Mr. Cypher of Cheltenham, and Mr. Robson of Altrincham. Silver medals were also awarded to Mr. W. Holmes of Timperley, and Mr. A. J. Keeling of Bingley.

Messrs. Cutbush, of Highgate, sent some beautiful flowering hardy plants and shrubs. Their strain of Cyclamen was the finest yet seen. Messrs. Dickson, Brown, & Tait, of Manchester, also showed a fine group of dwarf Lilacs and Azaleas, mixed with Lily of the Valley. Another excellent group was that of Messrs. Clibran, of Altrincham, in which there were prominent some magnificent clumps of Bermuda Lilies, contrasting vividly with Chorozeas and Ericas. An especially interesting exhibit was a stand of about a hundred fine specimens of the Hippeastrum, a showy flower of the genus Amaryllideae, which came from Gloucestershire, having been grown at Tetbury by Captain Holford, equerry to the King.

Messrs. Clibran & Sons, of Altrincham, had a capital display, in which Liliums and Palms figured prominently. The group had a very fragrant border entirely composed of Lilies of the Valley, and it contained a lot of remarkably well-grown plants. Under the balcony was a representative collection from the nurseries of Messrs. Dickson, Brown, & Tait, which included a row of very fine named Hyacinths, embracing many rare varieties. Scillas and Primroses in great variety were comprised in an excellent little collection of outdoor flowers sent by the Misses Hopkins, of Knutsford. The display of Daffodils by Messrs. Barr & Sons was most interesting, and the latest varieties exhibited at this stand attracted great attention. Among these may be mentioned the Duke of Bedford, the Nanus (the smallest known variety), and the Lobster, all of which are accounted rarities.

Messrs. R. W. Ker, R. Barr, and W. B. Upjohn, who acted as judges, made the following awards. Gold medals: Messrs. Barr & Sons, London, for the finest nurseryman's collection of Daffodils, including some ninety varieties; Messrs. Cutbush, London, for hardy flowering shrubs and greenhouse plants; Messrs. Clibran, Altrincham, for collection of plants; Messrs. Dickson & Robinson, Manchester, for spring flowers and Roses; Messrs. Dickson, Brown & Tait, Manchester, for Hyacinths, Narcissi, and Lilacs; Mr. James Mason, Manchester, for bouquets; Captain Holford for Amaryllis. The prize of £10 for the best amateur collection of Daffodils was won by Mrs. R. O. Backhouse of Sutton St. Nicholas, Hereford; and the first prize of £6 for a group of spring flowering plants and bulbs by Mr. James Brown, Heaton Mersey.

Awards of merit were made to the Misses Hopkins, Knutsford, for collection of wild flowers; to Mr. J. Broome, Llandudno, for cut flowers and herbaceous plants; to Mr. J. Brown, for a collection of Maréchal Niel Roses; to Mrs. Hodgkinson, Didsbury, for skeletonised flowers; and to Mr. Edwards, Nottingham, for nursery accessories. A silver medal was also awarded to Messrs. Dickson, Chester, for cut Daffodils.



Fruit Forcing.

Cherry House.—As soon as the stoning is completed the fruit commences colouring and taking its last swelling for ripening. The temperature may now be raised, not exceeding 60° by artificial means in the daytime, and 55° to 60° at night, with a little ventilation, increasing it at 70°, but not so as to lower the heat. Subject to the leaving of a little air on constantly, at the top of the house, close at 70°, but the temperature must not be allowed to exceed that degree in the early part of the day without full ventilation. From the commencement of colouring until the trees are cleared of their fruits syringing over the trees must cease, but a genial moisture should be maintained in the house by sprinkling the paths and border occasionally as the surfaces become dry. Aphides must be kept under by an insecticide, but fumigation or vaporisation only can be had recourse to after the fruits commence ripening. The border and soil of trees in pots must not lack moisture, otherwise the fruit will be prejudiced in swelling off and keeping plump, whilst red spider will seriously impair the foliage and prospect of the following year's crop.

Vines.—*Early Forced.*—The Vines with Grapes colouring must be afforded a due but not excessive supply of water, lightly mulching the inside border afterwards. This refers to the earliest Vines, which, as a rule, do not require nearly as much water as later ones, and an excess renders the soil sodden and sour, and shanking of the Grapes with indifferent finish is often the consequence. Where Grapes are fully ripe a reduction in temperature is advisable, yet moderate moisture and heat must be maintained for the benefit of the foliage. The moisture will not do the Grapes any harm provided the air is changed by judicious and free ventilation. A night temperature of 60° is suitable, and also suffices in the daytime by artificial means.

Succession Houses.—Attend to stopping and tying the shoots. Where the space is restricted stop them two joints beyond the fruit, and as increase is necessary, or at least advisable, leave the laterals both above and below the bunch, at least those from the two lowest eyes, and also those level with or above the bunch. Pinch these at the first leaf, especially the basal ones, also above, unless there is space for extending the laterals, when they may be allowed to make two or three leaves. After the area is furnished keep the growths closely pinched to one joint as made. The great evil is overcrowding, which deprives the foliage of the essential light and air, and restricting the growths is intended to prevent that as well as to concentrate the elaborated matter in the current crop, and wood and buds for the succeeding one.

Tying.—The shoots should be tied in the places where they are to remain during the summer, this being an operation which demands careful attention. It is a common practice to commence tying down the shoots as soon as they are long enough to bend. This is not advisable except as a precaution against injury from frost or scorching by their points touching the glass, as the shoots at this stage are so tender that the slightest twist the wrong way may break them. It is a better plan to defer tying down the shoots until they are less sappy, which may be when the fruit is forming; but a better plan still is to so dispose the rods that the shoots, instead of having to be brought down to a nearly horizontal position, will have an incline upward, yet sufficiently inclining to allow light to reach the basal leaves.

Vines in Flower.—Afford Muscats a free circulation of rather dry air, and a temperature of 80° to 85° or 90° in the day, falling to 70° or 65° at night, raising the points of the bunches to the light, and liberating the pollen at midday by gently rapping the footstalks of the bunches. If there is a deficiency of pollen take it from those that afford it plentifully, such as Black Hamburgs and Alicante, and apply it to the shy setting varieties with a camel's-hair brush, previously brushing over the bunches so as to remove the caps of the flowers, and operating about midday or after the house has been some time ventilated.

Thinning.—Free-setting varieties may be thinned as soon as they are out of bloom, such as Black Hamburgs, while some, like Gros Colman, Gros Guillaume, and Trebbiano, may be thinned whilst they are in flower, but Muscat of Alexandria, Lady Downe's, and Mrs. Pince, with Muscats generally, must not be thinned until the properly fertilised berries can be determined by their taking the lead in swelling. Follow up the thinning early and late, and on dull days. Remove superfluous bunches, reserving the best set and most compact, over-cropping being alike prejudicial to well-swelled berries as to colour, and to next year's crops.

Feeding.—Feed swelling crops liberally, either by surface dressings or liquid manure, and maintain a moist, genial condition of the atmosphere. It is well to use sweetened horse droppings, and spread them over the whole surface, in order to afford the Vines the benefit of the ammonia-charged atmosphere, adding a few freshly sweetened from time to time, but care must be taken not to overdo it. Where the Vines need extra support a liberal dressing of artificially compounded manure

may be used with great benefit, carefully following the instructions of the vendors.

Late Houses.—There are, as usual, complaints of bad breaks, which mainly arise from imperfect ripening of the wood, and the production of loose bunches may be attributed to the same cause combined with grossness of growth. Various expedients are resorted to for correcting the latter evil, the best thing being to stop the shoots three or four joints beyond the fruit, tying the growths to the wires. Choose the latter part of a fine day for this operation when the growths are limp, after keeping the house rather drier and warmer than usual. Gros Colman and other late free-setting varieties should now be forming the fruit, they will then have all the summer before them. These Grapes require a long time to grow and perfect, indeed longer than other varieties. Muscats and other shy-setting varieties should be carefully fertilised, operating on fine days.

A temperature of 70° at night, and 75° by day, without sun, is not too much for Muscats when flowering. It is usual to leave surplus bunches until the flowering is over, which is a mistake, as Vines that do not set a proper number of bunches satisfactorily are not likely to do better when more are left.

Late Hamburgs.—The growths will need attention and disbudding, tying down, and regulating. Do not stop the shoots until they are well developed beyond the fruit, to the extent of two joints where the space is limited, and four where there is room, pinching laterals below the bunch to one leaf. Above allow them to extend, so as to insure an equal spread of foliage over the space, but no more than can have exposure to light, afterwards keeping closely pinched. Ventilate early and freely, so as to insure short-jointed sturdy wood and thick leathery foliage. Avoid overwatering the border at this or any stage, but keep it in a moist state.

Young Vines.—Those planted last year are starting naturally, and may be assisted with gentle fire heat in cold weather. The canes will have been depressed so as to cause them to break regularly down to the basal buds, when they can be tied up in position. Disbud, leaving the best shoot about 18 inches apart on both sides of the canes. Crop very lightly, one or two bunches being the maximum. Any extra Vines planted to fruit early, and afterwards to be cut out, may carry a bunch on every side growth.

Newly Planted Vines.—When the Vines take to the fresh soil they will indicate it by growing freely. To secure sturdy growth ventilate freely, letting all the growth remain that can have full exposure to light. Supernumeraries intended for next year's fruiting should have the laterals pinched at the first leaf, afterwards allowing them to make a few joints of growth, and pinching the cane at 8 to 9 feet length. Take every possible care of the leaves on the cane, not allowing them to be interfered with in any way by the laterals. Close early with plenty of atmospheric moisture.

The Kitchen Garden.

Dwarf French Beans.—Another sowing of a good prolific variety of French Beans should be made in frames in order to continue the supply until the outdoor crop comes in. It is also safe now to commence sowing the outdoor crop, in limited quantity at first, following by successional sowings at weekly or fortnightly intervals, according to the probable demand and the space available. The seed may be sown either in single or double rows. The latter may be 9 inches apart, placing the seeds 4 to 6 inches asunder and 3 inches deep. This crop requires good ground, well trenched and manured some time previously. If such ground is not available take out a trench a foot deep and 15 inches wide, placing at the bottom about 4 inches of rotted manure, place in some soil, and thoroughly mix with fork or spade, then fill up with soil to within 3 inches of top, and sow seeds at the above mentioned distance. The plants may be eventually thinned to 9 or 12 inches. The best varieties for outdoor crops are Canadian Wonder and Ne Plus Ultra.

Scarlet Runner Beans.—There is nothing gained by sowing Runner Beans before the last days of April or the first week in May, as the growth appearing above ground too soon is liable to be injured by frost. An open, sunny position, and soil of a rich, deeply worked character, are essential for the successful cultivation of Beans. In a poor, shallow, or dry soil the flowers will fall without setting fruit, hence the desirability of insuring, previous to sowing, that the soil is well prepared. Failing a trenched piece of ground prepare the same as recommended for French Beans, though the width may with advantage be increased to 18 inches. Well rotted manure may be used, and a sprinkling of bonedust on the top. Sow the seed in a double row, 9 inches space between, the seeds about 6 inches apart in the rows. Eventually thin to a foot asunder. When the plants are well up, and begin to extend, fix a long stake to each plant, and cross them near the top, where they may be bound together, which is best done by running a horizontal stake along and securing all together. In wet, cold, and heavy soil the seed will sometimes rot, especially should the period when germination is commencing be wet and cold. In such cases it is not advisable to trust entirely to open air sowing, but raise plants in boxes, and transfer them carefully to the ground immediately the weather is safe after the middle of May. Seeds may be sown in boxes the first week in May.

Beet.—Another sowing of Beet ought to be made. The cold and ungenial weather during the past week or two has not been favourable

to the germination of these rather tender seeds where the sowing has been carried out rather early. It is probable that sowings made at the present time, or the following week, will prove the most successful.

Brussels Sprouts and Cauliflower.—Seedlings raised under glass, and pricked out in boxes or frames, should receive plenty of air to strengthen and harden the growth. Fully expose on favourable occasions. In a sheltered position fairly strong seedlings may be transplanted outdoors now, thus providing excellent plants to follow the earliest batch.

Celery.—Sturdy seedlings, obtained from thin sowing in boxes or pans, must, before becoming crowded and spoiled thereby, be pricked out on a bed of soil and manure in a frame. A cold frame, kept closed for a time, shading from bright sun, and sprinkling the seedlings daily, is better than a frame with bottom heat.

Tomatoes.—Tomato plants, to be fruited in pots, may now be placed in 11 or 12-inch pots. Pot them low down, supplying no more soil than will cover the ball of soil and roots, working it well round, and making firm. The pots must stand near the glass to keep the plants sturdy, eventually placing them in their permanent positions. If to be grown in borders the plants may also be put out. Too much soil, however, ought not to be given them. A comparatively narrow and shallow border on a stage near the glass, or in long narrow boxes, may be afforded. The plants should be not less than a foot apart, and kept to a single stem. Pot or plant firmly in a substantial mixture of loam four parts, rotted manure one part, pounded mortar half a part, wood ashes half a part, and a good sprinkling of bonemeal mixed in. Artificial manure may take the place of the bonemeal, using it at the rate of 1 lb. to a bushel of soil. Over-rich soil is not desirable at first.



- * All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Little's Soluble Phenyle (F.O.).—This article is prepared by Messrs. Morris, Little, & Son, Doncaster, and extensively used as a deodoriser, antiseptic, and disinfectant, being quite different from carbolic acid; indeed, it is prepared from creosote, treated with soft soap, and made soluble. In this form it has been used for destroying the root pests of crops, especially grubs in Carrots, and has been recommended for preventing and destroying eelworm. For Cucumber plants it has been used successfully at a strength of one part soluble phenyle to 1000 parts water, or 1 fluid oz. to 6½ gallons of water, the water being soft, and applied at the same temperature after solution, as that of the soil in which the plants are growing, or the mean of the house, giving as much as in an ordinary watering. In the case of plants grown under highly forcing conditions, consequently very tender at the roots, it may be advisable to use a weaker solution, say at half strength, or 1 fluid oz. to 12½ gallons of water, and increase the strength as the plants gain vigour, always being careful not to apply it too strong. It is necessary to begin early, as when the eelworm has obtained a good hold on the roots or root-stem remedy is out of the question.

Climbers for Garden Arches (Climbers).—For the double arches in the centre walk, which you think of planting with Crimson Rambler and Felicité Perpetué Roses, we should consider the claims of Gloire de Dijon in preference to the latter, or if you require a white, Grandiflora, a hardy and vigorous variety of the climbing section of Japanese Roses (*Rosa polyantha*), though Psyche, a seedling from Turner's Crimson Rambler, with flowers produced freely in clusters of eight to twenty, pale rose-pink suffused at the base of petals with salmon-pink and yellow, may meet your requirements if you require a pink flowered Rose. The following varieties of Clematis of the Jackmanni type have proved excellent:—*Flammula rubro-marginata*, creamy white, deeply margined with reddish plum, highly scented; *Gipsy Queen*, rich velvety purple, very free, late flowering; *Jackmanni alba*, white; *Jackmanni superba*, violet purple; *Prince of Wales*, purplish-purple; *Rubella*, claret-purple; *Star of India*, reddish plum, with red bar; *Victoria*, deep reddish mauve; and *Tunbridgensis*, deep bluish mauve. Of the *Viticella* type: *Earl of Beaconsfield*, rich purple; and *Thomas Moore*, violet, white stamens. Of the *Lanuginosa* type:—*Henryi*, white; *Enchantress*, double white, external petals flushed with rose; and *William Kennet*, deep lavender. Of *Honeysuckles*, *Lonicera Periclymenum* vars. *Early Cream*, *gratum*, *Late Dutch*, and *odoratissima*, with *L. sempervirens* (Scarlet Trumpet).

Crushed Bones (D. B.).—Do not turn them but crush them small, in that state they are best applied to Roses or any other garden plants.

Mowing Lawns (T. R. L.).—Lawns require to be frequently mown if you would keep them in good condition. It is a great mistake to permit the grass to grow to a great length before mowing, as then more time is necessary to do the work, the machine is strained, and the lawn never looks well. If you continue employing the machine you will find it the most economical to run it over the lawn at least once a week at this time of the year. We never care to recommend the implements of any special maker. Both the scythes you name are alike good, and equally good work can be done with them by a competent workman, and both are equally difficult to beginners, especially in the important matter of sharpening. Purchase the most inexpensive of the two "warranted" articles, and persevere until you can use it well.

Green Primroses (A. Jordan).—Simply a case of a plant having luxuriant conditions, whereby the most crude nourishing matter is pumped up into the foliage-leaves. These, being half hidden and very likely well shaded in the ditch, did not receive sunshine, so that the crude acids within the cells of the leaves had not become elaborated as they otherwise ought to and would have. Were you to plant the Primrose in an open, moderately sunny position, it would almost certainly return to a normal condition. Blue Primroses are common. Green as a colour in flowers is somewhat rare, although, of course, we have a green Rose (*Rosa viridissima*), an ugly monstrosity; and again our florists have perpetuated a green edge to the Fancy Auriculas. The Auricula, by the way, is regarded as a species of the genus *Primula* (Primrose), and from *Primula Auricula* have come all the manifold types of Auriculas to be seen in the gardens of to-day.

Hawks to Frighten Birds from Orchard (A Constant Reader).—The hawks may be used to advantage in the orchard by having them in separate cages open all round, or at least on two sides, so that each can be seen by the small birds, and, thus attracted, they will have their attention fixed on the hawks and be kept from preying on the buds and fruit later on. However, the stomach rules bird life, and after the birds find out that the hawks are powerless to inflict injury or death upon them, they, whetted in appetite, "fall to" on the buds or fruit, as the case may be, and feed to their heart's content, while the hawks sit moping in their cages, impotent for either scaring the birds or inflicting injury, that acts very deterrently. Still the birds are kept more or less on the alert, and, especially newcomers, to a great extent from committing havoc on the fruit buds or fruit, the hawks being shifted from one place to another, and being pinioned, put in trees so that they can move freely. We give these particulars as matters of experience, having had hawks in gardens and orchards for many years, and found them useful scarers of birds that prey on blossom buds, and also those that feast on the various fruits in their season. There is the mobbing of the hawks by the small birds, especially the thrush family, which in itself is great hindrance to depredation, and the predatory kinds give the hawks a wide berth. But the insectivorous birds are also scared, so that the good the hawks do must be carefully weighed against that they prevent being done.

Lilacs after Flowering (Forty Years' Subscriber).—We regret not being able to inform you how to treat Lilacs in pots so as to make them flower the following year, as this is one of the many things we have often tried, but never once succeeded in doing satisfactorily when the plants have been forced to flower early in the year; and even those flowered in relatively cool houses during March and April are not always satisfactory, they being continued under glass until the latter part of May, and then placed outdoors in a sheltered, but sunny position. The pots should be stood on a base impervious to worms, and plunged to the rim in coal ashes, syringing so as to keep the foliage clean, and duly supplying with water and liquid manure occasionally at the roots. Under this treatment the plants give occasionally some flowers the following year, but are much better allowed to grow on a year before again being forced. In the case of plants forced to flower early, it is a good and proper plan to cut the growths after flowering back to within 2 inches of the starting point of the previous year, continuing under glass in a cool house, but safe from frost, until the frosts outdoors have departed, the plants being well hardened off. The plants will make a good growth, and in the following year form flower buds and be suitable for forcing the succeeding winter, say from November, to flower at Christmas, fresh plants being introduced at intervals. As a rule Lilacs do not answer well for forcing two years in succession, consequently two batches of plants should be kept, one to remain in the ground outside whilst the other is being forced.

Names of Fruits (Peach).—Apple Golden Russet. (*Londonderry*).—Apple White Paradise.

Names of Plants (F. L. W.).—*Oncidium unguiculatum*. (*J. T.*).—1, *Oncidium concolor*; 2, *Lycaste Skinneri*. (*A. J.*).—*Primula floribunda*. We are always willing to help, but please send good specimens, not shrivelled scraps. (*A. L. S.*).—1, *Ipomœa Horsfallii*; 2, *Agapanthus umbellatus* var. *variegatus*; 3, probably *Cupressus funebris*, but it has not attained its true character yet; 4, *Aspidium angulare* var. *bulbiferum*; 5, *Aspidium aristatum*; 6, *Araujia grandiflora*. (*A. B. C.*).—*Shrubs*—1, *Pieris floribunda*, also called *Andromeda floribunda*; 2, *Skimmia japonica*. (*Climber*).—1, *Bignonia pallida*; 2, *Toxicophlœa spectabilis*, not a climber, but a greenhouse flowering shrub. Please number your specimens consecutively on another occasion.

Covent Garden Market.—April 24th.

Average Wholesale Prices.—Fruit.

	s.	d.	s.	d.				s.	d.	s.	d.	
Apples, cooking, bush. ...	5	0	to	7	0	Oranges, case	15	0	to	25	0
„ Tasmanian, case	12	0	15	0	Pears, ½ case ...	...	9	0	10	0	0
Cobnuts, doz. lb., best ...	6	0	0	0	Pines, St. Michael's, each	...	2	6	4	6	0	
Grapes, Hanburgh, lb. ...	4	6	5	0	Strawberries, lb. ...	...	3	0	5	0	0
Lemons, Messinas, case	9	0	12	0								

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 0	to 3 0	Leeks, bunch	0 1	to 0 2
„ Jerusalem, sieve	1 6	0 0	Lettuce, doz. French ...	1 0	1 4
Asparagus (Spruc Grass)	0 0	10	Mushrooms, forced, lb. ...	0 8	0 9
„ English, 100 ...	8 0	9 0	Mustard and Cress, pnnt.	0 2	0 0
„ Giant, bundle ...	15 0	20 0	Onions, Dutch, bag ...	5 0	0 0
„ Spanish, bundle.	1 9	2 0	„ English, cwt. ...	5 0	0 0
„ Paris Green ...	6 0	8 0	Parsley, doz. bnchs. ...	2 0	3 0
Batavia, doz	2 0	0 0	Potatoes, cwt.	3 0	7 0
Beans, French, lb. ...	1 0	1 2	„ New Jersey, lb	0 5	0 6
„ Jersey, lb.	1 3	1 6	Radishes, doz	0 9	1 0
Beet, red, doz.	0 6	0 0	Rhubarb, doz.	1 0	1 3
Broccoli, bush.	0 0	1 0	Savoy, tally	4 0	5 0
Cabbages, tally	3 0	5 0	Scotch Kale, bushel ...	0 6	1 0
Carrots, doz. bnch. ...	2 0	3 0	Seakale, best, doz. ...	14 0	16 0
Cauliflowers, doz. ...	1 0	2 0	„ 2nd, doz.	6 0	8 0
Chicory, Belgian, lb ...	0 4	0 0	Shallots, lb.	0 4	0 0
Corn Salad, strike ...	1 0	1 3	Spinach, bush.	4 0	5 0
Cucumbers, doz.	2 6	4 0	Tomatoes, Canary, case	4 0	4 6
Endive, doz	1 3	2 0	„ English, lb. ...	1 0	1 3
Greens, bush.	1 0	1 6	Turnips, doz.	2 0	3 0
Herbs, bunch	0 2	0 0	Turnip tops	0 9	1 0
Horseradish, bnch. ...	1 2	1 6	Watercress, doz	0 6	0 8

Average Wholesale Prices.—Plants in Pots

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz. ...	12	0 to 18	0	Ferns, small, 100 ...	10 0 to 16 0
Acers, doz. ...	12	0	24 0	Ficus elastica, each ...	1 0 7 6
Aralias, doz. ...	5	0	12 0	Foliage plants, var., each ...	1 0 5 0
Araucaria, doz. ...	21	0	30 0	Fuchsias ...	9 0 10 0
Aspidistra, doz. ...	18	0	36 0	Genistas, doz. ...	8 0 12 0
Aspidistra, specimen ...	15	0	20 0	Geraniums, scarlet, doz. ...	6 0 10 0
Azaleas, various, each ...	2	6	5 0	„ pink, doz. ...	8 0 10 0
Bononias, doz. ...	20	0	24 0	Hyacinths, doz. ...	6 0 12 0
Cinerarias, doz. ...	6	0	8 0	Hydrangeas, white, doz. ...	18 0 24 0
Crotons, doz. ...	18	0	30 0	„ pink, doz. ...	18 0 24 0
Cyclamen, doz. ...	8	0	10 0	Lycopodiums, doz. ...	3 0 4 0
Dracæna, var., doz. ...	12	0	30 0	Marguerite Daisy, doz. ...	8 0 12 0
Dracæna, viridis, doz. ...	9	0	18 0	Mignonette, doz. ...	6 0 9 0
Erica, various, doz. ...	8	0	18 0	Myrtles, doz. ...	6 0 9 0
Euonymus, var., doz. ...	6	0	18 0	Palms, in var., doz. ...	15 0 30 0
Evergreens, var., doz. ...	4	0	18 0	„ specimens ...	21 0 63 0
Ferns, var., doz. ...	4	0	18 0	Pelargoniums ...	10 0 12 0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums, doz.	1 6	to 2 6	Maidenhair Fern, dozen		
Asparagus, Fern, bunch	1 6	2 6	bnchs.	4 0	to 6 0
Azalea, doz. bnchs. ...	4 0	5 0	Marguerites, white, doz.		
Camellias, white, doz. ...	2 6	0 0	bnches... ..	3 0	4 0
Carnations, 12 blooms ...	1 6	2 0	" yellow, doz. bnchs.	2 0	3 0
Cattleyas, doz.... ..	10 0	12 0	Narcissus Ornatus, doz.	1 0	1 6
Daffodils, doz. bnchs. ...	1 0	2 0	Odontoglossums	3 0	4 0
Eucharis, doz.	2 0	0 0	Roses, Niphetos, white,		
Freesia, doz. bnchs. ...	1 6	2 6	doz.	1 0	2 0
Gardenias, doz.	2 0	3 0	„ yellow, doz. (Perles)...	2 0	0 0
Geranium, scarlet, doz.			„ red, doz.	2 0	0 0
bnches	4 0	6 0	„ Catherine Mermet, doz.	2 0	4 0
Hyacinths, doz. bnchs....	8 0	0 0	Smilax, bunch	3 0	4 0
Lilium lancifolium album	2 0	3 0	Spiræa, doz. bnchs....	4 0	6 0
„ rubrum	3 0	5 0	Stock, white, doz. bnchs.	2 0	2 6
„ longiflorum... ..	2 0	3 0	Tulips, white, doz. bnchs.	10 0	12 0
Lilac, white, bunch, ...	3 0	0 0	„ red	6 0	8 0
Lily of the Valley, 12 bnchs.	8 0	12 0	Violets, single, doz. bnchs.	0 9	1 0
Mignonette, English, doz.	6 0	9 0	„ double, doz. bnchs	1 6	2 6

Phenological Observations.

APRIL 26TH—MAY 2ND.

PLANTS DEDICATED TO EACH DAY.

26 Fri.	Lesser whitethroat heard.	Hedge Mustard.
27 Sat.	Cuckoo heard. Swallows seen.	Great Narcissus.
28 Sun.	Reed bunting sings.	Cuckoo Pint (Arum).
29 Mon.	Young redbreasts fledged.	Herb Robert.
30 Tu.	Martin first seen.	Cowslip.
1 Wed.	Yellow wagtail arrives.	Tulip.
2 Thr.	Young rooks fledged.	Charlock.

Trade Catalogues Received.

H. Cannell & Sons, Swanley, Kent.—*Floral Guide*.
 Alexis Dailière, Horticultural Establishment, Chaussée de Brussels,
 Ghent, Belgium.—*Palms, Orchids, Stove and Greenhouse Flowering*
and Foliage Plants.



The Sundries.

WHAT an old story it is, the importance of little things! School children have had it drummed into them for generations, but how few put into practice the precepts they have been taught. To the outsider, the town dweller for example, who pays an occasional visit to rural friends, or takes a country cottage or rooms in a farmhouse for his annual holiday, the expenditure on a farm appears to be very small apart from the rent, and he generally has a sort of idea that the greater part of the gross produce is nett profit. Even when the occupier does all the work, or nearly all the work, of the farm himself, the rent and rates are only the chief items in a multitude of outgoings, and there is ample reason for the remark so often heard, "a farmer's hand is never out of his pocket." Fifty years ago a farmer starting in business was estimating the probable balance-sheet of his holding, and on a friend pointing out that he had put nothing down to cover small expenses, added £5 to that side of the account. The farm was one of 300 acres, nearly all arable. The friend suggested the utter inadequacy of such a sum, but all he could do in the way of persuasion only increased the £5 to £20. A couple of years' experience were required to convince that new beginner that his friend had been right, and that £150 per annum was not too much to cover small items of expenditure, which seemed trivial in themselves, but occurring so constantly and in such a variety of ways, were of real importance.

There is no doubt that the neglect of attention to small details of expenditure has had much to do with the failure of the last generation of tenant farmers to meet the combination of bad prices and bad seasons which overwhelmed so many of them. When the farm failed to pay expenses they did not look into the items of the latter closely enough, and took too little heed of the outgoing pence, which so soon became pounds. Under the old régime the village tradesmen, blacksmith, joiner, &c., found farmers easy going as to their bills, and they were educated into easy-going ways themselves. Such a thing as the taxing of an account was almost unheard of, whilst tradesmen looked upon the business which they did with certain occupiers as an inalienable prerogative. We have even heard of a blacksmith appealing to a landlord because a tenant of the latter had ceased to employ him, and appealing with success. There is a story, perhaps too amusing to be true, of a farmer changing his blacksmith, but to his astonishment receiving at midsummer his usual blacksmith's bill from the old quarter, with all the regular details of repairs, shoeing, &c., remonstrating firmly, but emphatically, whilst pointing out that he had sent the man no work lately. "No, mester! but you owt to a' done," was Vulcan's reply. We have heard blacksmiths and carpenters make bitter complaint of the depressed times through which they are passing; they regret the old employers, but they do not blame the new, for they know the reason for the stricter economy and closer supervision which they exercise in matters of expenditure.

Looking through some old account books we find that on a holding of 500 acres, three-fourths arable, for forty years the average annual payments for tradesmen's bills and sundries, apart from rent, rates, manures, seed, labour, and horse Corn, amounted to £320, and it is certain that, at any rate for a great portion of that time, few items of extravagance were allowed to creep in, and the money was well laid out. The carpenter worked on the farm when required at 3s. per day and his meals, his money wages per annum being about £20. Timber and other materials came to another £20 or more, making £40 for carpenter's work alone, and this under the most economic conditions. The blacksmith cost quite as much, or a little more. All the shoeing was contracted for at so much per horse; a very good plan, as the blacksmith had a direct interest in seeing that the horses' feet were kept in good condition.

Saddlers' bills have always provided food for contention, and there is often soreness between farmer and saddler. Talking to a saddler the other day, he remarked that very few farmers now have their harness looked over and repaired on the premises as used to be done just before harvest. The saddler charged so much per day and for material used, and our friend also remarked that he used to spend a day of his own time in preparing his materials, time which he did not charge for. He has given up doing so, which perhaps may account for the change in the farmers' plans. Saddlers are always to be found at farm sales bidding well up for good harness and gearing, as it is to their interest to

keep up the value of sound stuff. Worn-out rubbish they are pleased to see farmers buy, and the man before mentioned declared that it paid him much better to repair old harness for a client than to make him new sets. But he also complains that the present day buyers of old harness come very seldom to his shop. He thinks that their wives must do their repairs at home, and sarcastically wonders what is done with all the old binder twine which comes from the stacks on threshing days. It certainly is tough, and may possibly come in handy for other purposes than tying up Corn and Potato sacks. We know a man who has always been noted for the very fragmentary way with which his horses were yoked. He has farmed a place which few would care to have, and has to all appearances done well. Perhaps his small saddler's bill may partly account for it. He did most of his repairs at home, and was always a good customer at the ironmongers for small copper rivets. Mending harness was nice evening occupation for his sons, of whom there were several, and kept them out of mischief.

The rope, net, and sack maker, is also one whose account has to be reckoned with, and if proper care is not taken to repair breakages in nets whilst they are small, and to have the nets retarred sufficiently often, and the sacks and ropes properly looked after, a big annual bill may easily be run up. We sometimes hear it said that it is a convenience to farm near a town so as to have the shops handy. So it is, but tradespeople do not keep shops for nothing, and it is those who run to the shops for every little thing, who complain most of their bills when Christmas comes round. Taking extracts from the farm books again, we find personal expenses, marketing, and on other business, averages about £20 per annum. Small farm sundries which are too trivial to have a column of their own come to £7. Waggoners' expenses average 35s. per annum. Steam coals only cost £8, but the farm was in a colliery district, and the money represents 20 tons, and much Potato steaming as well as threshing.

Work on the Home Farm.

There has not been much rain during the past week, and though, except for one really beautiful summerlike day, the atmosphere has been anything but genial, much better progress has been made on the farm. The tearing winds have been a great help, and drilling has begun to go really well now that spring sowing is almost over.

Clover and grass seeds are being sown at the same time as the corn. Waiting until the grain grows would delay the small seed sowing until a period too late for safety; and Barley sown as late as this does not stand harrowing as well as early sown does. Most farmers are agreed as to sowing their Clovers now, but there is much difference of opinion as to the method, some, but a minority, preferring to drill them immediately after the corn drill, and harrow all in together, which certainly is a good plan for grass seeds, which are often insufficiently covered; whilst many others harrow their corn in, then run the Cambridge roll over it, and drill the Clover, &c., on the rolling, just before the Barley peeps through. Only a very light harrowing is needed, and the Clover is well covered, and near enough to the surface for successful germination. Small seed drills are now indispensable. It is very rarely we see a man sowing from a hopper, which once was the universal method, and the vocation of the hand sower is gone. At several spring sales which we have been able to closely observe we have only seen one lot of sowing hoppers offered. Manures are almost invariably drilled, and it is noticeable that there is very little competition for combined drills, which sow both seed and manure, the tendency being all in the direction of a separate implement for each operation. Perhaps the work is better performed thus, but the labour must be greater, whilst the multiplication of machines can hardly tend towards economy.

Sheep pastures have improved and the animals are thriving, but there are cases of rather serious loss of lambs amongst our neighbours. Sand in the maw is blamed, but there is evidence of lockjaw from castrating and docking. It is the older and fatter lamb which dies, and probably the operations above mentioned would have been more safely performed at an earlier age. Six dead lambs per day is serious, whatever the cause, and the owner has our sympathy.

A feature of this season is the almost total absence of second-year seeds for sheep grazing. As a fact, last year's seeds were always a poor plant, and we suppose not worth keeping down another year, otherwise surely another year's grazing would have paid better than a crop of Corn. Rent, rates, and shepherding would have been the sole expense, and not a heavy one. A piece of two years' seeds in the next parish has been let at 30s. per acre, out of which the rates have to be paid, say 2s. The annual value is about 20s., so there is a profit of about 8s.

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Journal of Horticulture.

THURSDAY, MAY 2, 1901

The Influence of Business.

WWE have heard a good deal lately about the influence of the trade in matters horticultural. There seems to be a fear, among a certain section, of trade influence becoming too powerful. However this may be, the fact remains that the interests of business have played no small part in the great advance of horticulture. With the death of an old century, and the birth of a new one, it is only natural that we should indulge in a general retrospective survey. Progress in the old century has been written up from almost every conceivable point of view, and gardening journals have done their share from their own particular standpoint. Everyone admits that the strides made in gardening matters during the Victorian era are phenomenal, and over and over again we have been reminded that these tendencies are attributable to the national love for horticulture, and the increased knowledge of the art. This is perfectly true, and it is pleasant to think that these are the motive powers; but do not let us overlook the part played by the commercial element, nor ignore the magnet of wealth, which has really been the irresistible impulse throughout these years of progress.

We are told of the energetic plant collectors, who have penetrated unknown regions, and secured the natural treasures of every clime; but has all this effort sprung from the love of mere enterprise only? Of course not. English horticulture has been the gainer in every respect by the introduction of plants from other lands, and, generally speaking, business has been the motive power. It is to the enterprise of tradesmen that thanks are due for many of the foreign additions to our gardens, which are so much esteemed. Without, however, the magical attraction of money a great many of them would have remained undiscovered and uncatalogued, or, to speak more poetically, "wasting their sweetness on the desert air."

Again, you may trace the evolution of any popular flower, fruit, or vegetable that has been



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improved under cultivation, to such an extent that its original form is almost obliterated, and a large share of the credit is claimed by tradesmen. Let it be given freely, for in securing their own rewards they have enriched the world of gardening. I doubt whether a new introduction in the eyes of the majority of raisers and importers is measured so much by its beauty or utility as by its value in a commercial sense, and it is quite natural. Novelty is a word with a meaning in these days. New things are eagerly sought after, and a large community is engaged in securing them. Perhaps monetary gain does not prompt them all, but those not influenced by the business considerations are in the minority. Much has been gained by it, for it is no exaggeration to say that if the only reward of hybridisers, raisers, and importers had been honour, our gardens would have been destitute of many beautiful and useful things which they now contain. I do not say that it is all gain, for, as I have already pointed out in a previous article, the anxiety in part of the trade to introduce novelties for the sake of the reward has led to the presence of scores of synonyms, and the need of a general weeding out.

The power of trade has done great things in the distribution of plants, which otherwise might never have been appreciated to their full value, or known outside a small circle. By taking a little trouble it is easy to find out the origin of many a popular fruit, flower, or vegetable. More than one world-wide subject originated in small obscure gardens, and there might have languished for ever in a state of comparative uselessness but for some enterprising tradesman, who, seeing the possibilities of the plant, and counting on its value, made it his business to bring it before the notice of his clients. A community benefits by it, but the tradesman's part in the transaction was to enrich himself, not so much gardens generally; and here we have an example of the indispensable force of business influence. The whole process is quite natural, but let all sides be fully recognised. Horticulture generally would not benefit by scores of useful introductions if the trade did not step in as a means of distribution, because these things would never be known. And the common end is a common prompter. The amateur who raises a new variety because he likes to dabble in that sort of thing, is as ready to dispose of his stock to the tradesman as the latter is to buy, and without these transactions the world at large would benefit nothing.

The annual report of the Royal Horticultural Society lies before me as I write, and it bears record to a steady progress, which everyone interested in its welfare must be gratified to see. How much of the Society's success is due to the influence of the trade is a matter of opinion, but it is considerable. The interesting shows at the Drill Hall, the great horticultural gathering in the Temple Gardens, the work of the several committees, the matter for the report, and the indispensable support of the public—would they exist without the trade? I am afraid it would be impossible. Another question I would ask, Why are the gatherings of our flourishing Society so well and consistently supported by the trade? Why is the space at the Temple show all too small, and why do nurserymen go to the considerable expense of exhibiting at the meetings, where no prizes are offered? There can only be one answer—because it pays in other directions. I see nothing unreasonable about admitting these facts. The Royal Horticultural Society has existed as an amateur body, but whether the Society would flourish so actively without the trade is another matter. Admittedly each is helpful to the other, and all parties concerned really benefit. Business is so wrapped up in most of our interests nowadays that we are obliged to tolerate its presence and admit its power. Truth to say, the currents of the age make for wide specialism in all things as population grows more dense. Only the prophet or apostle who lives upon locusts and wild honey can afford to be a genuine amateur. Even General Booth has found a rigid system of finance necessary for the preservation of an organisation based upon individual self-sacrifice. Our Society is full of inconsistencies, and there is less unreason in a man making money out of flowers than a mere girl getting money for what she calls the damage done to her affections, a blending of the real with the ideal, which has been countenanced by our law for more than two centuries.—H. H.

Awake !

I have been looking for signs to show that dear old Mother Earth was bestirring herself. She seems to me to have slept long this winter; she certainly is hard to wake. She stayed up late in the old century—the days were mild and calm, and the nights free from frost; somehow she lost count of time. I was going to say, stray blossoms decked her till nearly or quite Christmastide, but the blossoms were more than stray, and we might have mixed Roses and other sweet things with our Yuletide garlands. When people go to bed late they rise late, but I would fain have the morning hours. With lengthening days I search for signs of spring. I wish I could see the covelet move more certainly; there have been but few tremors, but all seems still again. Here in the North we have this spring been long flowerless. Nothing but the bitterest weather keeps the Aconite away, and there are a few Snowdrops, but really not more or in a more advanced stage than they were a month ago. But, what will you? How can anything thrive in these bitter frost winds and constant snows? The birds think spring is coming, for we hear sweet notes from all sides; they are full of faith, and it is getting its full end of trial. So often in February we have some genial bright days; as I write they are still to come. Well, often after a long waiting time the change comes in a night. The soft wind blows, and Old Sol asserts himself. Given a few fine days it is simply marvellous how soon the earth decks herself out.

Later.—Yes, a warm soft rain has fallen; the garden smells good; the birds' song is redoubled. You felt the moment you waked that there was a change; it is as I said, the night has done it. The children are all running out hatless, the men folks talk of early Victors or Ashleaf, and are turning over their sets and sorting their quart packets of Peas. The women want to see if the bulbs are moving, or if by chance there is a bit of flower anywhere. They look into the Rhubarb pots, and question of the Seakale. It is marvellous, the alchemy of sunshine! We throw off the weight of years. I know the cares return again, but the cares are not so black when the body is sun-warmed and the air bright with light. I always think the clearest views are obtainable in spring, and it is quite the best time for a long ramble. Wherever you live there is always some favourite prospect within reach, and seen on a spring day the clear air discovers fresh beauties.

There has been no "pottering" about the garden lately. There will be no "pottering" now; plenty to do, and such pleasant work; even the despised lady gardener may find a job. I do think, as a rule, a woman is more patient than a man; I am sure she is more neat-handed. There must be something in all this male jealousy. These men are frightened, else they would not be so bitter. We do not all aspire to head gardenerships; if we prove ourselves competent for them they will come; we only want to take our chance fairly and honestly. If men did but know how sick some of us are of the house and its enervating duties, they would be glad to give us a chance of a little fresh air. Do not we often hear of lads to whom an office stool or a shop counter means almost death? and no one grudges them an outdoor occupation. And yet if the women (I mean those above the labouring class) try and emancipate themselves from indoor bondage, there is such an outcry! One would think a female gardener was quite a new idea, something quite preposterous, and yet how many of us could tell of quiet workers (and skilled ones too) who have brought about marvellous changes in the gardens that they loved. We have quite a goodly store of female gardening lore now, and the cult is growing; so beware, unkind men. "Fair field and no favour," is all we ask, and Englishmen, although grumpy, are generally fair if they will only look at a question from a right point of view. We do not want to oust the lords of creation, we only want to work side by side with them. Let us hope the good time is not far off.—THE MISSUS.

The Movement of Sap in Plants.—It was long ago ascertained that all the life processes of a plant or animal are conducted in very minute cells. The plant and animal are composed of countless millions of such cells, each of which is at the same time a machine and a chemical laboratory. The work done there requires a certain amount of moisture, and the cell has a wonderful power of absorbing fluid. Its walls are so porous that it can absorb from one neighbour and pass it along to the next. This operation often leads to the transportation of soluble substances, like sugar and potash, from one part of the tree to another, either for storage or manufacture into something else. It has been suspected that this suckling power of the living cell alone explained the upward movement of the sap, while it has also been suggested that the flow is due merely to capillary action. But botanists are yet a good deal in the dark as to the mechanical forces behind the performance. This much is clear, however. The sap is most abundant at those seasons when returning warmth stimulates the vital activities of the cells; and it is most scarce when the leaves cease to use it.



Odontoglossum × *Adrianæ* *Crawshayanum*.

THIS moderate sized but exceedingly handsome variety of the popular *O.* × *Adrianæ*, was presented before the Orchid Committee (R.H.S.) at their sitting on Tuesday, the 23rd ultimo, by de Barri Crawshay, Esq. (gardener, Mr. Stables), of Sevenoaks. The flowers were of great substance, perfect in form, and with a well-pronounced crimped lip. The edges of the petals are yellow, the inner halves being white, while purple-brown spots bedeck the whole surface. Mr. Crawshay's plant was bloomed from an importation of Mr. Boshell's, to whom Mr. H. A. Tracy is agent. It received an award of merit.

Lælia lobata.

In habit and manner of flowering this *Lælia* is a good deal like *L. crispæ*, but the colour is quite different—a pretty rosy purple with deeper venations on the sepals and petals, the lip a bright amethyst. The plant has one great fault, and that is its very shy flowering habit. It is not at all unusual for plants that are really well and vigorously grown to go on year after year without producing a flower, and then without any apparent cause to flower freely for a year or two. It is not well to grow it too strongly or repot very often. In several cases that have come under my notice this has led to fine healthy looking growth and bulbs, but no flowers.

I had some plants of it years ago in baskets, and these were left alone, as they did not flower until they grew quite out of the baskets, and hung with their bulbs and roots bare. Although the growths were shorter and weaker it had the desired effect, and almost every leading bulb produced a flower spike. This seems a clear case for the let-alone principle, but of course this would not be satisfactory over a number of years. Starvation is not good for any Orchids, and if followed up the treatment would result in their getting weaker every year until they ceased to be of any value.

This uncertainty of flowering has led to the species being neglected, but as it is so very distinct and pretty it is worth being at a little trouble to induce it to do well. The plan most likely to succeed is to place the plants in the smallest-sized receptacles they can be got into conveniently, and to endeavour by frequent top-dressing to maintain a reasonable amount of vigour in the plants without unduly disturbing the roots; then, when the increased size of the plants necessitates a removal to a larger basket or pot, let the shift be sufficiently large to obviate the necessity of doing so again for some years, not filling the whole of the new space with compost, but using plenty of crocks and charcoal, simply surfacing this with the peat and moss.

By giving this large shift it will generally be possible to place the old basket or pot inside the new one, but, of course, this must not be done if the former is decayed. A little manipulation with the fingers may remove some of the decayed portions, but it is better to shake the plant right out than to leave anything in likely to contaminate the new material. Constant exposure to light, and as much sun as possible, is also an inducement to the plants to flower, and they should, if possible, be suspended as near the roof glass and ventilators as possible. *L. lobata* is also known as *L. Boothiana*, and is a native of the coast of Rio de Janeiro, growing on cliffs fully exposed to the sun and sea.

Cymbidium eburneo-Lowianum.

This is a very fine hybrid, and I have just seen a fine spike of it carrying three flowers of unusual size. The sepals and petals are white, with a slight reddish suffusion; the lip white, with a yellow centre, and a double blotch of crimson in front. It is becoming fairly well distributed among Orchid collections, having been raised in several places. It has occurred, I believe, as a natural hybrid, a plant having flowered some three years since from an importation; but it must be very rare in a wild state, or more would probably have been heard of it.—H. R. R.

Spades.

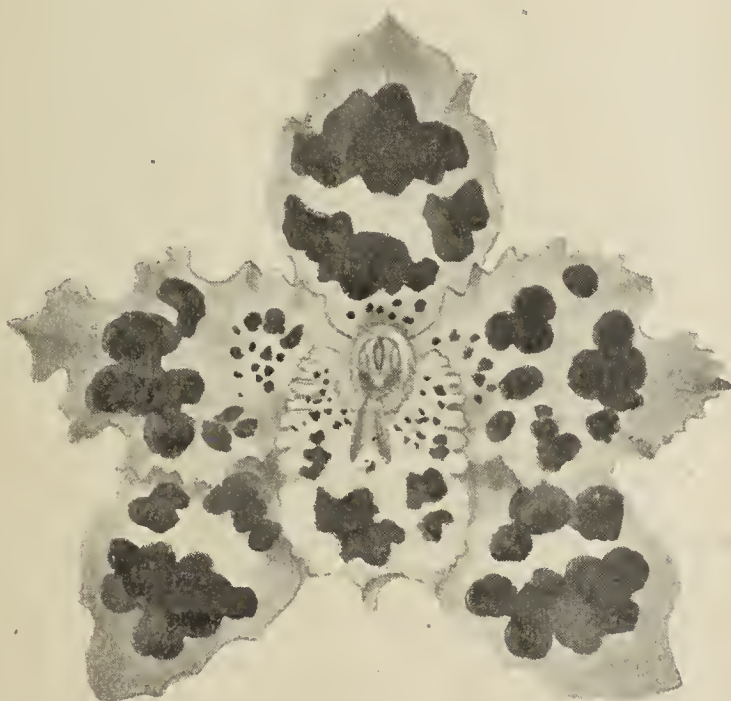
UNPROFITABLE spades are such as those measuring in the blade from 13 to 22 inches in length, as well as those that weigh from 7 to 10 lbs., all of which are either too long or heavy to be profitably used. The long drain spade requires, owing to its extra length of blade, to be wrought in a slanting direction, and therefore the digger cannot apply his whole weight to force it speedily into the ground. Its extra length of 10 inches produces a leverage weight when being used; this, with the additional weight of the long iron straps upon the handles, as well as that of the soil that usually adheres to the spade, owing to its circular form and careless keeping by some, often make it about 6 lbs. heavier than the garden spade No. 2. All the other spades referred to are also too long and heavy, many of which will also be about 6 lbs. more in weight than the spade No. 2. Supposing that two men lift each six spadefuls in a minute, they would at the same rate in a day of nine hours lift each 3260. The one using the heavy spade would lift over 8 tons more than the other using the lighter one, the spade of the former being 6 lbs. heavier than that of the latter. It has been amply proved beyond all doubt, that a spade when worn to 10 or 11 inches in length becomes by the wear a better tool than when new, owing to its having been made smoother, lighter, and shorter, whereby the digger with his foot upon it is able to use all his weight to force it quickly into the ground, hence the advantage of

using light sharp spades of a moderate length. The author, thirty-five years ago, while superintending the draining of several farms in Renfrewshire, advocated the disuse of the heavy tools, and the use of lighter ones; and even more than once tested their comparative merits in a drain, and on each occasion the party using the lighter ones beat his rival by doing nearly as much again. The extra straps put upon the handles are not required if the latter are made of good straight wood, 5 in. in circumference, free of knots or other defects. Spades should not be used in raising heavy stones, further than clearing away the soil from them, so that they may be lifted by a pick or crowbar. In digging hard ground, such as that trodden by horses in the corners of fields, that cannot be ploughed, take thin spadefuls, not exceeding 4 inches thick, so that they may be easily turned over and broken down, as large spadefuls are difficult to raise and pulverise, and are likely to injure the spade, which should not be dashed into the soil, as it often happens to strike a stone

below the surface, and consequently gets either bruised or broken, and thus rendered difficult to use. When such occurs, the best thing to do is to have it at once repaired; this may often be done by grinding or rubbing it upon a large stone, or by dressing it with a file.

Handy tools are more valued than cumbersome ones, therefore more care is taken of them, so that they last often as long as the latter; but even supposing these lasted twenty years longer, there would still be a great financial loss by the use of the heavy tools compared with the gain realised by the lighter. Generally agricultural implements are too heavy, such as large carts, which even when empty are sometimes enough for the poor beast to pull, being frequently waterlogged, owing perhaps to the careless carter leaving it exposed to the weather. Wheelbarrows, like the carts, are usually too big and heavy to be used advantageously. If carts and burrows were made lighter, with good material, and kept from rusting when out of use, they would last many years longer than they usually do. These hints apply to reaping and other machines, as well as to all implements used in agriculture and horticulture. Societies might do well to deal with the subject, perhaps in the way of giving premiums for the best made and kept implements.

The writer has used light spades without the long straps, made by Mr. Thomas Black, for all sorts of spade work, over sixty-five years, and has not as yet broken a handle. He now recommends a new make of light smooth spade, numbered 1 and 2, and made of solid cast steel, polished all bright. The blade of No. 1 measures $11\frac{1}{2}$ by $7\frac{1}{4}$ inches, No. 2 $11\frac{3}{4}$ by $7\frac{1}{2}$; also that the blade of the narrow drain spade be only 12 inches instead of 22 in length. Notwithstanding all that has been said regarding the burdensome long spade, it is often taken to the smithy, when worn to 12 inches long, to have 8 or 10 added to its length.—JAMES DOBBIE.



ODONTOGLOSSUM × *ADRIANÆ* *CRAWSHAYANUM*.

Greenhouse Hardwooded Plants.

(Continued from page 340.)

Ericas.

WITH the softer wooded sorts the knife may be freely used to prune them hard back after flowering, when they should be kept close and be frequently dewed over with the syringe, under which treatment they will soon break into fresh growth, when, if they require it, they should be repotted. With the hardwooded sorts the knife should seldom or never be used, the training and regulation of the branches being effected by pinching. They must at all times have plenty of air, and no more fire heat than what is necessary to exclude frost; in fact excess of fire heat during winter, and bad watering, account for more failures among this class of plants than any other causes.

After having completed their growth, towards the end of summer they should be placed outside on a bed of ashes. Thus by exposure to sun and air the wood will get properly ripened and matured, and a good display of flowers will be assured. This applies more especially to the softwooded section. I, myself, have seen the hardwooded ones kept inside all the season, and, where space will admit of it, this is probably the practice to follow. It may be thought that I have gone rather fully into details, but to do them justice one would require even more space. In the main the above treatment will answer for the general run of hardwooded plants. Heaths and several other hardwooded plants, during winter and dull weather, are liable to be attacked by mildew, which should be got rid of by the use of flowers of sulphur.

As regards sorts, the most useful are *Erica ampullacea* and vars. *rubra*, *mammosa*, *affinis* (flowers pale yellow, this is a species); *Cavendishiana* (bright yellow, not unlike *affinis*, but as I already stated, is a garden hybrid); *E. colorans*, *gracilis*, *hyemalis*, *persoluta*, *melanthera*, *Wilmoreana*, *ventricosa* and vars. As many of these as possible should find a place in every collection.

Epacris.

In point of numbers the beautiful genus of *Epacris* falls far short of the *Ericas*, there being only six species, and, with the exception of *E. racemosa* from New Zealand, they are all natives of Australia. At the present day they are perhaps more popular than the *Ericas*, and they most certainly have the advantage of being better subjects for a supply of cut flowers. The plants may be readily propagated as recommended for Heaths, and like them they should be potted firmly in a mixture of peat and sand, taking care to give them perfect drainage, as during their growing season they require a plentiful supply of water. Here, again, as in the case of Heaths, one must be content to wait a few years and form a good foundation for our future plant, which can only be attained by judicious stopping in their earlier stages. However, if one wishes to go no further than small plants for decorative purposes, one may attain that end in the course of two years.

In *Epacris* we get two distinct classes of plants, one of a stiff, erect habit of growth; the other, of the *miniata* type (or *longiflora* as it is now called), are of a more loose and straggling habit, and usually flower later than the erect growing ones. Soon after flowering the erect growing ones should be cut back to within an inch or two of the previous year's growth, and placed in a frame or pit, where they can be given a closer atmosphere and higher temperature, in which, aided by frequent dewing with the syringe, they will soon break into fresh growths. If they require repotting it should be done when they have made about an inch of growth, and after their roots have got a hold of the fresh soil they should be given more air. To get well furnished specimens it is advisable to stop them at once, this being done when they have made about 4 inches of fresh growth. Later on, place them outside on a bed of ashes, taking care that the pots are not too much exposed to the hot sun, as, in common with all hardwooded plants, they have very fine roots which are very apt to suffer if allowed to get at all dry. The *miniata* type does not require to be pruned so hard as the stiff, erect growing sorts, but as they are later in flowering it should be done so soon as the flowers fade, thus allowing them plenty of time to finish their growth before placing them outside. Plants of the *miniata* type may in time be grown into huge specimens. I, myself, have seen large plants trained on balloons, some 4 feet in height, and in late winter and early spring I know of no more beautiful and lasting subject for the furnishing of the conservatory and greenhouse—this apart from their usefulness as regards a supply of cut flowers. There are now many garden varieties of the erect growing sorts, their colour varying from pure white and pink through all the shades of red and crimson.—J. COURTS.

Points in Malmaison Culture.

THERE are a few points that it is essential to observe in order to succeed with this most popular flower. At the stage we have reached, shading from sunshine is most important. It at once preserves the foliage in a healthy green, and lessens the amount of water necessary to preserve the roots in working condition. The application of water forms a most vital part of their treatment. At no time should the soil be soaked; but, on the other hand, while the plants are in vigorous growth, it must not be allowed to become so dry as to cause the root-hairs, which are now freely produced, to shrivel and die. Once the flowers have been cut, then the supply of water should be lessened, by which means the young growths will be ripened and produce better plants when layered, while those kept on for winter or spring blooming will more certainly set a crop of buds, and the foliage will be firmer and in better condition to stand the treatment necessary to induce the flowers to open in a kindly manner. With regard to manure, I more and more regard its application with suspicion; none is supplied to the plants in the soil, nor any until the colour of the foliage shows that an exhaustion of material has supervened, then a slight surfacing of superphosphate is applied. At the most, two applications I find to be sufficient to carry the plant safely past the blooming period. To be more definite, as much material as can be placed on a shilling is ample for one dressing. Permitting aphids to gain a footing, no matter how slight it may be, is invariably succeeded by an enfeebling effect. If not sharply dealt with, the plant is shortly ruined in appearance, and if allowed to extend to the buds the flowers are spoilt. Provided the plants can be cultivated under the conditions they like, aphids, as in the case of *Cinerarias* grown under sympathetic treatment, seldom appears, but as a rule it may be expected; hence it is safe and judicious to fumigate the plants at intervals in order to make sure that no pioneer of the tribe has made a settlement unseen.

Plants are also enfeebled, and very commonly so, from neglecting to thin both the shoots and the buds. It is quite a common occurrence to have strong plants pushing from eight to a dozen growths, and these, if allowed to remain unthinned, seriously weaken the plant and lower the quality of the bloom. In practice, I find from four to six growths the right number to leave, when they develop into strong vigorous shoots, and produce grand material for layering later on. As to disbudding, if long stems are as important as fine blooms, the buds must be reduced to a single one on each stem, but for ordinary purposes, and with vigorous plants, four or five may be left. With regard to ventilation, so long as a draught is prevented, I have never known a free circulation of air to be other than beneficial. At the same time, it is sometimes necessary to modify what one knows to be best in order to secure some particular end; as, for instance, to hasten the period of blooming, and if care is exercised not to shut up the plants in a moist atmosphere, which in all circumstances is only pernicious, no harm will follow limiting the amount of ventilation. It is, indeed, often necessary during warm muggy weather, when the flowers are expanding, to shut out the damp-laden atmosphere, and on occasion, even in the midst of summer, I have found it needful to apply a little artificial heat to preserve the blooms from damping.

Another matter demanding consideration is whether plants wanted to flower during the dull months of the year should be allowed to flower previous to repotting, or be potted on in spring as soon as the soil has been nicely filled with roots. The latter is the way I prefer, much stronger plants being the result, and no check occurring, as it frequently does when the plants are not potted till they are partly exhausted after flowering. There is just one other point I desire to touch on, that of propagation. The fact must have struck everyone who has cultivated Malmaisons intelligently, how susceptible they are to any check of growth, and how easily disease is induced through checks. Not infrequently I have noticed bad results follow after lifting layers rooted in beds of soil and potting them up. On that account, though more troublesome, and involving a much greater expenditure of time and labour, I have for some time practised laying the shoots into small pots, afterwards potting them on into 32's, with the result that such plants grow from the very beginning straight on, and are scarcely susceptible to disease. Layering should on no account be long delayed after the plants have been bloomed out. If, however, the growths are soft, by keeping the plants somewhat dry at root, and at the same time freely exposed to ventilation, they will be in prime condition in a very few days. Hard shoots do not make good layers, nor grow so freely after they are rooted. In cases where disease or rust has got a grip of the stock it will be best kept in check by laying very short points, or as much of the end of the growth as may have escaped attack.—B.

Peeps in Rock Gardens

THE margins of water pools can be effectively planted when knowledge, taste, and skill are put into practice. The figure at the base of this page shows a little pool in which there was used with pretty effect in summer the common little Water Crowfoot, which soon took possession of the surface and delighted in still water. Had *Ranunculus aquatilis* been an exotic and not a native plant, it would have been much sought after by lovers of aquatics, even if it had to have a little pond to itself. In the foreground, to the right, is *Spiræa* or *Astilbe astilboides*, which is seldom seen in such a position, although it makes a capital waterside plant, and proves quite hardy. Opposite it are the rather handsome leaves of the double Marsh Marigold, *Caltha palustris flore pleno*. With its toes in the water, it flowers far more freely than in a dry border, and looks extremely well in its season. The illustration on the top

of this page is much the prettier of the two, and portrays a miniature pool, such as one may sometimes see on a rocky hill side, but glorified by its being surrounded by beautiful garden plants arranged in a most artistic and pleasing way. Just appearing in front is one of the *Dodecatheons*, or American Cowslips, which



A ROCK-BOUND POOL WITH SUITABLE HARDY PLANTS.

graph was taken, there are many pretty peeps such as this, which will serve to show how much may be done by such accessories to give additional charms to a rock garden.—S. ARNOTT.



HARDY FOLIAGE AND FLOWERING PLANTS ENCIRCLING WATER.

do so well in a moist, but not too wet, spot. Conspicuously seen in the background is one of the *Funkias*, or Plantain Lilies, almost all of which like moisture also. By the way, those with yellow or variegated leaves do not look so well beside water as those with self-coloured foliage.

In the background are the feathery flowers of a *Spiræa*; and we have nothing which associates better with water than the herbaceous species of that beautiful genus. I am not quite clear what one was grown, as it is some time since I had the pleasure of seeing this garden, but one can hardly go wrong in placing any of the plants of this section of *Spiræas* in the immediate vicinity of water. They like to get their roots into the moisture, and grow with greater vigour and attain greater beauty when in such a position. In the Shirlingshire garden where this photo-

ORCHID SALE.
—At the sale of the collection of exhibition Orchids at Walton Grange, Stone, Staffordshire, by Messrs Protheroe and Morris, two bulbs and one strong growth of the *Odontoglossum Rolfe* hybrid realised 210 guineas, while two fine bulbs of the *Odontoglossum crispum* The Earl fetched 160 guineas.

Some Useful Annuals.

ANNUALS, which not only make an attractive display in beds or borders, but also furnish material for cutting, are usually the most appreciated, and are far more useful than some of the weedy subjects which cannot be used for the latter purpose. Where space is restricted, and it is necessary to make the most of that available, a select list of the best annuals which will meet the two requirements mentioned above ought only to be grown. A knowledge of what is suitable to meet these general requirements can only be gained from experience in growing a varied assortment from time to time of hardy and half-hardy annuals. As the present is an appropriate season for drawing attention to these generally useful flowers, a few notes indicating what I have found valuable for the purpose of garden decoration and cutting to place in vases, glasses, and nosegays, may be of service to some readers.

The half-hardy annuals include a good selection of species which, as a rule, require to be sown under protection during April, and afterwards pricked out when quite small, in order that they may strengthen and develop a bushy and branching habit, which enables them to be more floriferous, and to bear flowers of a substantial character. French and German Asters, Quilled Asters Comet, Chrysanthemum-flowered and single Asters, are all useful. The dwarf or Tom Thumb double Scabious proves very attractive, both when flowering on the plants and as cut blooms for various purposes. The colours are various and extremely rich, ranging from pure white, pink, and cherry red to purplish black, indeed some of the colours are unique, and seldom found among other flowers. It is important that the plants in their early stages be grown sturdily, so that fairly strong flower stems may be produced. The Scabious commences to bloom early, and continues a considerable time. The earliest plants are produced from sowing under glass, and pricking out, finally planting at end of May; but seed can be sown outdoors now in drills, thinning the plants gradually to a foot distance apart. Asters may also be treated in a similar way.

Zinnias are exceptionally useful annuals, a good strain of seed producing some striking colours. If grown in good soil and with plenty of room the plants grow very sturdy, and need little, if any, support. Flowering continues throughout the season, and is usually plentiful in autumn. Seed may be sown now outdoors on a warm and sunny border. There are both dwarf and tall varieties. The latter are the best adapted for cutting, the height reached being 2 feet. Salpiglossis are superbly and richly marked flowering annuals which make an attractive bed, and can be employed for cutting, though they are rather fleeting in character when used for the latter purpose; nevertheless they afford a change, and may be renewed as the flowers continue to be produced on the plants. Seed may be sown now on a sunny border. French and African Marigolds are somewhat common, but they are found to be very useful in autumn. Sow thinly in boxes under glass now, or outdoors at the end of May.

Among the hardy annuals may be mentioned the annual Chrysanthemums, of which there is a good selection of varieties, double and single; Cornflowers, Coreopsis, Eschscholtzia, Mignonette, and Nasturtiums. Sow all these in drills about a foot apart, and thin out the seedlings to 9 or 10 inches or more, and the result will be that the plants will flower profusely throughout the summer. Sweet Peas are a hardy annual, and are indispensable; but sow in drills, like culinary Peas, and afford sticks to support the growths. Sweet Peas amply repay for the attention given them.—E. D. S.

A Schedule Blunder.

The Shrewsbury Show.

It is no new thing for the compilers of prize schedules to make mistakes, but of late years there has been a marked improvement in this respect, inexperienced framers consulting the judges known to them before re-arranging or altering their prize lists. This being the case, anything in the shape of a serious blunder is somewhat surprising, especially when found in the prize schedule of the Shropshire Horticultural Society, whose summer shows, annually held in Shrewsbury, stand in the same relation to many gardeners as does Mecca to the devout followers of Mahomet. It is the one show where really valuable prizes are offered and won by exhibits worthy of the occasion. Especially are the Grape classes at these shows attractive to gardeners, who never fail to appreciate the merits of the magnificent examples invariably staged, and we, that is to say, numerous Grape growers, have gradually been converted to the

opinion that nowhere else can such large quantities of superior Grapes be seen in competition. This being so, it behoves the members of the committee to do all they can to keep the lead they have gained, and in particular to avoid setting bad examples; yet they (through their advisers, no doubt), have made an extraordinary blunder on page 17 of the prize schedule for the next summer exhibition. Valuable prizes are offered for twelve bunches of Grapes in four or more distinct varieties, but not more than four bunches of any one variety. Each bunch is to be judged on its individual merits, and points awarded as per R.H.S. code. So far, good; but why not be also guided by this same code in the matter of synonyms? or do the Shrewsbury authorities presume on their position to the extent of trying to improve on the laws laid down by the R.H.S. experts? In the R.H.S. code Bowood Muscat, Charlwood Muscat, and Tynningham Muscat are considered synonymous with Muscat of Alexandria, but the Shrewsbury schedule framers "go one better," and include Canon Hall Muscat in the same category. They borrowed the wording of the rule largely from the R.H.S. code, but made a serious mistake in adding Canon Hall, which no Grape grower of experience would think of condoning. In order that there shall be no misunderstanding, I will quote the Shrewsbury schedule paragraph in full. "For the purpose of this competition, Bowood Muscat, Charlesworth Tokay, Tynningham Muscat, and Canon Hall cannot be shown as distinct varieties with Muscat of Alexandria. Gros Maroc, and Cooper's Black are also considered synonymous." The italics are mine.

Now I happen to have about a dozen young Vines of Canon Hall Muscat growing in different houses, and have also assisted in growing this variety in large private gardens, so that I feel fully competent to express an opinion upon its distinctness. From the beginning to the end of the season no mistake can be made as to its distinctness from all other varieties of Grapes, and the merest tyro could separate the bunches from those of the Muscat of Alexandria. The canes are apt to be stouter, the lateral growth thicker, and the leaves plainer than those of the Muscat of Alexandria, while the style of bunch, size and form of berry, is equally distinct. Canon Hall is more difficult to set properly many of the larger bunches, and these are of a great length at times, are all "tops and bottoms," the cultivator if he is wise, early removing what promise to be such unsightly productions in favour of smaller, more compact "shows." When, however, seen at its best, Canon Hall is a noble Grape, and instead of shutting it out from the collections at Shrewsbury, for that is what it practically amounts to, every encouragement ought to be given to growers to exhibit good samples. I am not writing as an aggrieved exhibitor, as I cannot possibly compete in the class mentioned, much as I should like to do, but am acquainted with at least two successful Grape growers who will be hit by the absurd rule laid down as to the non-distinctness of the Canon Hall Muscat.—W. IGGULDEN.

Diseases in Plants.*

It would appear that as gardening becomes yearly more and more intense, a greater number of maladies, or cases of disease in plants, unwelcomely confront and inflict the labours of cultivators. The Tulip disease constantly enforces attention in this or that garden where probably it had never been known previously; equally the Daffodils are known to suffer, and the poor gardener, who may have been depending perhaps for a large amount of his cut flowers from the bulbs, in his anxiety packs off the crippled subjects for the friendly advice of "The Editor," or someone in whom he trusts for counsel.

It is our conviction that a very great deal of disease is present, seen or unseen, in nearly all gardens. Our modern methods of growth all tend towards the greatest acceleration—quick returns and many of them. We have doomed the old hardwoods, favourites of our fathers, and fostered in their place those genera whose life cycle is complete within the twelve months. And the comparative rush, and tear and wear, engenders such debility that our plant subjects have no vigour to thwart the mysterious fungoid germs that we conclude are ever present, subtly hovering over and around animal and plant organisms, awaiting to presume their baneful influence upon them.

Yet "knowledge is power," and the molestation of our unseen microbic or mycologic foes is persistent; perhaps the scientific element of mankind, since the awakening in recent years, has also been perseveringly active in skilled investigations of the actions and mode of continuity of the germs causing disease.

With the aim in view of supplying cultivators and all others engaged among plants and trees with concise information regarding plant diseases, Professor H. Marshall Ward, a pre-eminently qualified mycologist, has

* "Diseases in Plants," by H. MARSHALL WARD, Sc.D., F.R.S. Macmillan & Co., Ltd., price 7s. 6d.

written a book which conveys the most recent discoveries and truths in plant pathology, in language so plain and clear that even he who runs may read. Indeed, this is one of the great qualities of the Professor's book. He does not become abstruse nor ambiguous, but begins a practical tale from the beginning, and works his knowledge out in well chosen sequent chapters.

The surroundings of the plant, its food, roots and root hairs, and the functions of them; the biology of the soil (quite a new form of expression, grandly chosen); causes, and the nature of disease, are points which form the matter for some of the chapters, of which there are altogether thirty.

The author does not attempt to describe or diagnose any special disease or diseases of a plant or plants. He has successfully written an easily understood story of plant life in many of its phases, showing where plants are open to attacks, how they are attacked, and suggests what would prevent the diseases. As an elementary book for young gardeners, or for those who are anxious and willing to become better acquainted with what we may term the inner life of plants, we most strongly recommend this work. It includes a good index, is printed in fine large type, clearly, and on stout paper, extending to 309 pages; yet the book is neat enough to carry conveniently in a jacket's pocket. It ought certainly to be placed in every cultivator's and plant-lovers' library.

Herbaceous Borders.

In the herbaceous border, more so perhaps than in any other part of the garden, there is a tendency to let matters drift from season to season, and I think it is chiefly brought about by neglecting to divide subjects at the proper time, and so it is that many borders do not get turned over very frequently. The argument that is used sometimes against hardy plants in general is, that they are permitted too much latitude, and beyond a slight forking, the soil hardly ever is touched; but where summer bedding plants are only grown, the borders are well dug in autumn or spring, and so become "sweetened." I fear there is much truth in the assertion, as when one knows that under ordinary circumstances most of last year's tenants will be of service again this year, we are inclined to put off until a more convenient time the overhauling of things that are hardy. It is, however, unwise to defer too long a duty of this description, as if plants require splitting up, and the opportunity was not taken in autumn, the spring of the year should be seized for getting on with the work. Some subjects will go longer than others without very much attention in this direction; others again demand looking after, or they deteriorate, besides edging out of the way by their encroachment some subjects in the borders equally favoured. To state a case, one has not to go further than the Starworts or Sunflowers, both useful in their season of blooming, but fearful land grabbers. Give them a space, and leave them undivided for a time, and they soon lay claim to the next portion of the border, and swamp, as one might say, any small and less robust plant growing there. Nor is this all, for the neglected border is not long in notifying the fact. The small flowers where large blossoms should be; the untidy and straggling appearance of everything speaks all too plainly of a need for division of roots, of a thorough digging of every part of the soil, with probably an addition of new loam and manure if the same is wanted, and thus give a new lease to many of the tenants. One cannot of course lay down a rule, that near a given date certain plants must be split up, just in the same way as one knows when to sow Runner Beans. I sometimes think it would be well if such an axiom could be resorted to; but horticulture declines to be bound by any fixed rules, so much depends upon the nature and habit of the plants under culture. It is therefore needful that growers of hardy plants should take stock now and again, and rectify any matters that are pressing.

Opinions vary as to the really best time to perform the duty, whether autumn or spring, but if division was necessary last October, it is doubly so now. A small clump producing seven or eight plump shoots is to be preferred to a clump with twice that number of weaklings; we see this often in Phloxes, Lathyrus, Delphiniums, Lupins, Dielytras, Doronicums, that in congenial soils and positions grow quickly, and if left too long untouched the centres of the clumps become smothered. The planting of new species, upon which we have set our minds, is a work not without its charms, and if there is one error into which the hardy plant man is more likely to tumble into than another, it is the danger of ordering or selecting more plants than one can conveniently accommodate. When, for instance, we peruse some list fresh from the firms that deal specially in what we best like, we are sometimes tempted to order them only to find that when they grow the border presents an overcrowded appearance. Such mistakes come to many, and the note of warning it is necessary to heed is the one deprecating overcrowding.—W. F.

NOTES & NOTICES

Weather in London.—Thursday of last week continued the succession of sunny days which had been experienced the previous week. Friday, however, though bright, was very much colder and windy; while on Saturday morning some gentle showers fell. Sunday, again, was an ideal day; Monday somewhat dull and cold, with frost in the early morning; and on Tuesday the conditions were dull but milder. As we go to press the day is agreeable, though hazy.

Weather in the North.—The past week has been one of bright sunshine, and although coldish easterly winds have prevailed the weather has been good for the season. During Monday night gentle rain fell, and Tuesday morning was dull and drizzly.—B. D., S. Perthshire.

Weather in Ireland.—The bitter climatic conditions of departing March has been pleasantly relieved by the present sunny month. In the early days a few slight thunderstorms swept over portions of the country, and accompanied by showers of hail, which lasted fortunately for a very short period; since, the weather is all that can be desired, with an occasional sharp wind, but a complete cessation from rain.

Fruit Prospects and the Weather.—The display of fruit tree blossom this year is most satisfactory in this part of Bedfordshire, but we have had a frost this morning (April 29th) which may seriously alter the prospects of a crop. Many Pears, and nearly all Plums, with the early Cherries, are in full flower, as well as the bush fruits, and everything was looking most promising. Now we have to record a minimum temperature of 22°, or 10° of frost; and this, followed by a bright sunny day, will severely test the hardiness of all the fruits named. An exceptionally dry state of the atmosphere will, however, possibly serve as a preventive of the worst results.—R. L. C., Ridgmont.

Royal Gardeners' Orphan Fund.—The thirteenth annual dinner, in aid of the Royal Gardeners' Orphan Fund, will take place at the Hotel Cecil, Strand, W.C., on Tuesday next, May 7th. The Hon. W. F. D. Smith, M.P., is expected to occupy the chair. Subscriptions for the chairman's list will be gladly received. The secretary is Mr B. Wynne, 8, Dane's Inn, Strand, W.C.

The Sherwood Cup.—A silver cup, valued at £10 10s., since 1898 has been offered annually by N. N. Sherwood, Esq., for competition as the Council of the R.H.S. have thought desirable. In 1898 it was offered for "annuals," in 1899 for "vegetables," in 1900 for Apples and Pears, while this year the competition will be for the best collection of Orchids shown by an amateur at the forthcoming Temple Show, in a space not exceeding 100 square feet. In 1892 it will probably be offered for the best collection of hardy ornamental trees and shrubs shown at the Temple. Notice of intention to compete for the cup must be sent to the R.H.S. Secretary, 117, Victoria Street, eight days before the competition takes place.

Royal Horticultural Society.—The next fruit and flower show of the Royal Horticultural Society will be held on Tuesday, May 7th, in the Drill Hall, Buckingham Gate, Westminster, 1 to 5 p.m. A lecture on "Alpines and Other Small Plants for Walls" will be given at 3 p.m. by Mr. E. H. Jenkins, F.R.H.S. Preceding the lecture the President of the Society, Sir Trevor Lawrence, Bart., will confer the Victoria Medal of Honour on the new recipients—Sir George King, K.C.E.I., Miss Ormerod, L.L.D., Mr. George Norman, and Mr. James Sweet. * * The Society will hold its fourteenth great annual flower show in the Inner Temple Gardens, Thames Embankment, by the kind permission of the Treasurer and Benchers, on May 22nd, 23rd, and 24th, 1901. Schedules may be obtained on application to the Secretary, R.H.S. 117, Victoria Street, S.W., enclosing a stamp. * * We received on Wednesday morning the Journal of the Society (vol. xxv., part 3). The volume (7s. 6d. to non-Fellows) opens with a retrospect of the doings of the now famous old Society since 1887, the year of our late Queen's jubilee. A portrait of Thomas Andrew Knight, F.R.S., the first president of the Society, is included in this volume, and numerous other illustrations of great interest brighten the 500 odd pages.

The Birthday of a Great Evolutionist.—Mr. Herbert Spencer, an evolutionist who in many respects rivals the late Charles Darwin, celebrated his eighty-first birthday on Saturday the 27th ult. He is unhappily rather an invalid, but sees his friends as usual in his Brighton home. It is expected that he will spend the summer this year again near Midhurst, in Sussex.

Liverpool's Freedom for Henry Yates Thompson, Esq.—At the Council meeting, held on Wednesday, the 24th ult., under the presidency of the Lord Mayor, it was unanimously decided to confer the freedom of the city on Henry Yates Thompson, Esq., for his valuable gifts of conservatory, Palm house, statues, &c., to the Sefton and Stanley Parks, the two buildings which have been so handsomely erected by Messrs. Mackenzie & Moncur, of London and Edinburgh, being now splendidly furnished with a grand selection of spring flowering bulbs and foliage plants, and a decided acquisition to the public at large.—R. P. R.

Tamworth Early Chrysanthemum Show.—A show of early flowering Chrysanthemums will be held on Saturday, 28th September, in the Town Hall, Tamworth. All takings over bare expenses will be given to the Tamworth Church Lads' Brigade Fund. There are twenty classes, the first of which offers 40s., 30s., 20s., 15s., and 10s. respectively for prizes, and there are others as good. For further particulars apply to Mr. William Sydenham, Tamworth; Mr. D. B. Crane, 4, Woodview Terrace, Archway Road, Highgate, London, N.; Mr. Robert Cock, Lichfield Road, Stafford; or Mr. Joseph Kent, The Park, Hanley.

Poor Prices for Daffodils.—Numerous complaints have been circulated through the agency of the daily press regarding the failure of the cut bloom market. The bulb growers in the Fens are this season having a disastrous market for the blooms sent to London and provincial centres. The return does not nearly pay for the cost of labour in gathering the flowers. Varieties of blooms which last year sold at 6s. per thousand are this year only making about 1s.; whilst a Spalding grower, who sent away a large consignment, received back 3d., the amount remaining after the payment of commission and carriage. These ominous tales arise regularly.

Miscellanea.—Prof. Fernard estimates that the annual loss to agriculture from insects represents 300,000,000 dols., and further that only a small portion of the amount is unavoidable. * * An ex-Governor of Kansas is now preparing in that State an orchard of 880 acres in extent, in which 64,000 Apple trees are to be planted. * * Among the insects, while the perfect state is generally limited to a few months, certain of the bees live for a few years, and the same is probably true of the ants. * * A pair of robins have built in the centre of a recurved, spinous-leaved plant (*Hechtia argentea*) in the Succulent House at Kew. * * Forty-three acres of wooded land are to be bought as an addition to Brockwell Park (86 acres) in London, S.E. The purchase money required is £66,858, and only £500 is now wanted to make up this amount.

Temple Show.—The Royal Horticultural Society will hold its fourteenth great annual show in the Inner Temple Gardens, London, by the kind permission of the Treasurer and Benchers, on May 22nd, 23rd, and 24th. This magnificent horticultural display is now recognised as one of the chief events of the London season, and is, as all gardeners know, immensely popular. It is estimated that between 60,000 and 100,000 persons visit the show every year. We learn that, as a guide to the show, the Society will publish an official catalogue during the three days of the show, and a copy will be presented free of charge to every visitor. The Society guarantees a distribution of 10,000 copies of the catalogue, and as many more as may be required. Among the contents of the official catalogue may be mentioned—I.—An historical sketch of the R.H.S., since its establishment in 1804, in the reign of George III. II.—Particulars of the fortnightly flower shows held in the Drill Hall, Buckingham Gate, Victoria Street, S.W., and at the Crystal Palace on October 10th, 11th, and 12th. III.—Names of plants and groups exhibited, with special reference to any new, rare, or noteworthy varieties. IV.—Full names and addresses of all exhibitors at the Temple Show, with description of their exhibits. V.—Programme of music to be performed each day by the band of his Majesty's Royal Horse Guards (Blues), under the direction of Lieut. Chas. Godfrey, R.A.Mus. The schedule of this great show reached us on Friday the 26th ultimo. It is a mere leaflet, with the numbers and names of the classes. Fuller particulars will be found in the Society's "Book of Arrangements" for 1901.

A Numerous Election.—No doubt Rev. W. Wilks, as secretary of the Royal Horticultural Society, would feel he had earned a good night's repose after "calling over the names of 144 new Fellows" at the general meeting on the 23rd ult., as reported by one of our contemporaries last week.

Children's Concert.—A concert was held on Tuesday, April 23rd, at St. James' Hall, Piccadilly, by the Reformatory and Refuge Union, at which a choir of 500 children sang. The front of the platform was tastefully decorated with cut Narcissi and Daffodils, and with Ferns, Palms, and Spiræas from Mr. A. J. Brown of the School of Handicraft, Chertsey.

Notes on Our Report of Dublin Show.—In report of show you print Mr. Pigg for winner of Narcissus; this should be Mr. Rigg. You likewise omitted *Hippeastrums* from Obelisk Park; they were very fine. Scarlet selfs predominated, and the segments of the flowers were splendid. Interspersed with them were *Freessias Leichtlini* major, superbly grown and in abundance; also Ferns, principally *Adiantums*, were also requisitioned. The gardener was awarded a cultural certificate, which was by no means an equitable recommendation.—A. O'NEILL.

Obelisk Park, Dublin.—Fresh from his triumphs at Royal Hort. tourney, Mr. Davies, gardener to Mrs. Goodbody, Obelisk Park, Blackrock, has his gardens ablaze with flowers. Apart from his houses of *Hippeastrums* and *Freessias*, the *Dendrobiums* are now making a goodly show; on adjoining benches Tulips and Hyacinths in variety, with abundance of *Begonia Gloire de Lorraine* and giant white *Cyclamens*. The *Dendrobes* flowering at time of visit was the well known nobile; the pendant orange blooms of *densiflorum* were in quantity, whilst *Paxtoni* and the pretty *Jamesianum*, with pure white petals with red lip, had flowered well, also *chrysotoxum*, and several smaller plants coming into bloom. There was a very profuse quantity of flowers present, and were excellently staged.

A Note to City Gardeners.—In the matter of providing public pleasure grounds, it would be well for those who are of a trimming and straight-lined temper to consider that, whereas a garden in a waste or outlandish district is made to look all the better by regularity and art, by the artificial as distinguished from the natural, a garden in the precincts of a great city ought to have as little appearance as possible of human ingenuity and art—ought to be as natural looking, as wild looking as possible. The beautiful in such a case is largely due to effect by contrast. Lord Armstrong had this in his mind when he made to Newcastle the inestimable gift of Jesmond Dene—the city garden that has not its equal in Europe.

Song Thrushes and Robin Redbreasts sing daily in the warmer houses of the temperate range at Kew. One of the thrushes is quite a favourite, and well known to habitués of the range. The bird begins his afternoon carol about four o'clock of each day. The early hours of the morning are also cheered with his pure-voiced solos. Heard under glass in this way, and to see the birds free amongst the luxuriant growth of Tree Ferns, Musas, and Bamboos, there is a unique and pleasing charm attached. Why not at least have a well-managed and planned aviary in large conservatories? Even caged canaries would surely enjoy their own confined little lives and please their owners better were they more frequently housed with plants under glass.

Edinburgh Parks.—Mr. M'Hattie, the new head gardener, at a meeting of the Public Parks Committee of the Edinburgh Town Council, suggested that early in next autumn at least two cricket pitches be made at the meadows. He advocated the relaying of the waste places of Bruntsfield Links with turf. The most effective method of dealing with the worn-out shrubs in West Princes Street Gardens would be to remove them and plant them afresh. In his judgment there was a great lack of colour in the gardens, and to relieve the monotony he suggested the formation of a series of flower beds on each side of the lower walk. He also suggested greater variety in the treatment of East Princes Street Gardens. Mr. M'Hattie also advised that the playing of golf, cricket, and football in Roseburn Park be delayed till the autumn months. With reference to Inverleith Park, he suggested the formation of a triangular piece of ground round the proposed site of the Kinloch-Anderson sun-dial, laid out in an ornamental manner, besides other minor improvements. The committee approved generally of the report, and gave authority for the works recommended, which will cost about £500.

Appointments.—Mr. H. Taylor, for upwards of eleven years head gardener to Lord Kenyon, Gredington, Whitchurch, Salop, has been appointed as head gardener to Lord Hatherton, Teddesley Park, Penkridge, Staffs. Mr. Frank Landsdell, for the past two years foreman at Moat Mount, Mill Hill, as head gardener to W. Minet, Esq., Hadlam Hall, Herts.

Kent, the Isle of Man, and the Census.—Census returns from seventeen villages in East Kent show that in fifteen cases the population has decreased to a great extent, there being in some instances a falling-off of as much as 25 per cent. The actual decrease on the seventeen returns is 1010. * * The completed census for the Isle of Man, published on Friday last, also shows a decrease in the decade of 995 inhabitants, the total population being 54,613.

Regent's Park Show.—The spring show of the Royal Botanic Society was held on Wednesday, April 24th, and followed the usual pattern of the Regent's Park exhibitions. Messrs. Hogg & Robertson, R. H. Bath, Ltd., and Barr & Sons staged Narcissi, &c., while other trade exhibits were from Messrs. Carter & Co., B. S. Williams & Son, G. Cuthbert & Son, and J. Hill & Son. There were no competitive classes. The day was very pleasant, and with the music provided by a good military band the numerous visitors enjoyed the afternoon. A notice of the forthcoming events of the R.B.S. will be found in this column.

Royal Botanic Society of London.—A number of garden parties and pastoral plays have been arranged for the summer, to be held in the Society's gardens at Regent's Park. There will be four pastoral plays in June and six in July. In June there will also be an exhibition of Rhododendrons on view each day during the month, and an exhibition of hardy herbaceous plants is to form another feature at the same time. In November comes a Chrysanthemum show. Illuminated evening fêtes and musical promenades will also add charm to the very dull lives (!) of the Regent Park botanists. Really, everybody should join the Royal "Botanic" Society.

Variorum.—A schoolgirl of Knaresborough died from Daffodil poisoning on Thursday, the 25th ult. On her way to school she ate some Daffodil flowers. She afterwards became sick, and a doctor was called, but in vain. * * A rook crusade has been started on the Haddo House Estates in Aberdeenshire. A similar attack is badly wanted in some other parts of the country. * * 225 students sat last Wednesday, April 24th, for the R.H.S. examination in horticulture. Last year there were 236 papers sent in. * * A schedule of prizes has been prepared by the National Sweet Pea Society, and an exhibition of Sweet Peas will take place at the Royal Aquarium, Westminster, on July 25th and 26th, 1901.

Royal Horticultural Society of Ireland.—The monthly meeting of the Council was held on April 23rd, at 5, Molesworth Street, at which were present:—Sir Percy Grace, Bart., D.L. (in the chair), Edmond D'Olier, Ernest Bewley, F. W. Moore, M.R.I.A., H. Smallman, Rev. F. C. Hayes, M.A., Greenwood Pim, M.A., H. P. Goodbody, Geo. M. Ross, M.A., D. Ramsay, and Major Cusack, J.P. The secretary submitted a report of the spring show, which was considered most satisfactory, both from a horticultural and financial aspect. In addition to the awards made at the show, the Council, on the recommendation of the judges, were pleased to make the following special awards:—Gold medal to Messrs. Alexander Dickson & Sons, Newtownards Nurseries, for their beautiful exhibit of Daffodils and forced Roses; similar award to Miss Currey, The Mall House, Lismore, for her meritorious collections of Daffodils; silver medal to Messrs. Hogg & Robertson, 22, Mary Street, for their superb collection of Daffodils and Hyacinths, grown at their Rush Bulb Farm. Cultural certificates were awarded to the following:—Mr. Andrew Campbell, gardener to the Right Hon. Lord Ardilaun, D.L., for his effective group of flowering plants; Mr. Samuel Davies, gardener to Mrs. Goodbody, Obelisk Park, Blackrock, for a superb exhibit of Amaryllis and Freesias, and which made such a feature in the show; a first-class certificate to W. B. Hartland, Esq., Ardcairn Nursery, Cork, for a large Narcissi, provisionally named Hyperion. The Society has secured the Viennese and Blue Hungarian Bands for their two summer shows, to be held in Merrion Square on the 2nd July and 27th August. The Council have fixed the second Thursday in the month, at four o'clock, for holding their meetings, instead of Tuesdays. The next exhibition to be held by the Society will be their great Rose Show, in Merrion Square, on Tuesday, the 2nd July, at which the Viennese Band will perform.

Daffodil Show at Wisbech.—An exhibition of Daffodils and other spring flowers was held at Wisbech on Wednesday and Thursday, April 24th and 25th. The principal trade exhibits were arranged by Messrs. R. H. Bath, Ltd., of Wisbech; Barr & Sons, London; Toogood and Sons, Southampton; and the South Holland Bulb Nurseries Co., Sntton Bridge. The show was good all round.

Work of Sparrow Exterminators.—At a recent annual meeting of the Doddington, Newnham, and Eastling (Kent) Sparrow Club on Saturday, no less than 7387 sparrows' heads were produced by members. This was the result of a year's work of extermination of what East Kent farmers look upon as a pest to fruit and field crops. During the eight years' existence of the club 49,330 sparrows had been accounted for by the members.

Mr. Peter Barr on Tour.—When last heard of, Mr. Peter Barr, V.M.H., was in Tasmania. From personal benefit derived, our septuagenarian friend speaks in glowing terms of the climate of Tasmania. New Zealand, despite its reputation, is, according to Mr. Barr, not to be compared; and Tasmania must, he predicts, become the recognised sanatorium of Australia. He has toured all the west coast, visiting the principal mines; and also the east and north-east coast. Mr. Barr was to leave Tasmania for South Australia, where he would stay one month before proceeding to Western Australia, where he contemplates spending a year if the climatic conditions suit him.

Irises from Messrs. Ware, Ltd.—The arrival of blooms of *Iris susiana* and *I. iberica* upon our table recalls to mind Messrs. T. S. Ware's (Ltd.) splendid exhibits of these species at the Drill Hall shows last year. We have also seen fine growths of these two plants at their Feltham Nurseries in Middlesex. *Iris susiana* is a magnificent species from the Levant, and was figured in the *Journal of Horticulture* of January 4th last year. The flowers are very large, bold, and beautiful, having broad, substantial petals heavily studded and streaked with deep mauvy-black spots and lines over a grey ground colour. *I. iberica* has pale standards streaked with delicate lavender, and brownish crimson falls. Both blooms speak well for Messrs. Ware's stock.

Irish Gardeners.—The monthly meeting of this Society was held in their quarters, D'Olier Street, on Thursday last. The chair was taken by Mr. O'Kelly (president); the attendance of members was small. Mr. Campbell, the assistant secretary, read the minutes of the last meeting, which were duly passed and signed; the secretary then read several local items which demanded attention, and were shortly settled. The following were proposed as members of the Society—Messrs. Boylan, Cavanagh, Duffy, Morrison, and Reilly. Mr. Hall (the secretary) read the announcement concerning the May meeting, that Mr. Cottier has generously consented to give another prize of £1 for the best exhibit staged at the May meeting, to be of convenient size, and to be grown by the exhibitor, the points of quality and utility to be embraced in the judging. After a brief discussion it was unanimously agreed to award a second and third prize of money value; likewise the assistant secretary was directed to post circulars with data for this competition to all the members. The meeting shortly afterwards adjourned.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.					
1901.										
April.										
Sunday .. 21	S. E.	deg. 61.9	deg. 50.5	deg. 71.1	deg. 43.5	Ins. —	deg. 50.3	deg. 48.0	deg. 46.2	deg. 33.5
Monday .. 22	S. E.	67.2	54.6	71.0	42.9	—	51.9	48.9	46.5	35.0
Tuesday .. 23	S. S. E.	64.8	54.0	73.8	44.0	—	52.7	49.6	46.8	36.6
Wed'sday 24	E. S. E.	64.9	53.5	70.0	45.5	—	54.0	50.5	47.2	37.9
Thursday 25	E. S. E.	57.4	50.5	64.2	49.3	—	53.3	51.0	47.5	41.5
Friday .. 26	E. N. E.	54.3	43.9	62.0	45.0	0.01	53.0	51.1	47.9	39.9
Saturday 27	N. N. E.	44.9	41.9	52.0	39.8	0.04	51.5	51.0	48.2	34.5
MEANS .		59.3	49.8	66.3	44.3	Total 0.05	52.4	50.0	47.2	37.0

The first part of the week was warm, bright, and summer-like, the latter part being much cooler, with a return of drying north-east wind. Some rain and hail fell on the 27th.

Dipladenia Culture.

WHAT regal looking flowers the Dipladenias are when seen growing luxuriantly on the roof of the stove, or taking their part at our early and late summer shows; and yet it must be confessed that we do not see them by any means nearly so well grown or represented as they were some years back, a fact much to be deplored, for they certainly give us a shade of colour that we get in few of our stove plants, the handsome and freely produced flowers and rich green leaves being always worthy of admiration. Many causes are adduced for their not being largely grown, such as they do not grow freely, or that they are so liable to the attacks of insects, but this ought not to deter the earnest cultivator, as difficulties can always be surmounted in every part of a gardener's avocation, and when once overcome, the way appears not so tedious after all.

To grow Dipladenias successfully there is nothing like having a good propagating case, with sufficient plunging material to allow of the pots being inserted to their rims. Clean pots and crocks are indispensable, and the sand used should be of the very best quality. These arranged for, a start may be made. Two and a half inch pots well drained I have always found a useful size, and sufficiently large to accommodate one cutting, as, if the body of the soil is too large, the cuttings often decay. Nor should the compost for them at this stage be of a heavy texture; good sifted peat, finely powdered charcoal, and silver sand I have always used with success.

Fairly hardened side shoots, if taken with a heel, make the best cuttings, and no time need be lost in their insertion, as I know of nothing that suffers so quickly if left on the potting bench exposed to the air. It is far better to propagate in the house where the plants are growing, then no check is given. Make the cuttings fairly firm in the soil, water with tepid water, and place in the propagating case, just keeping a chink of air to dispel superfluous moisture.

In a short space of time roots will be formed, then some 4½-inch pots should be in readiness, using a compost a shade rougher and securing each plant with a neat stake. Water sparingly for a time, but keep in a brisk heat, securing the growths as they advance, and tying to the wires to prevent their being twisted. About June the plants will require a further shift, and treated as previously advised. When autumn approaches much care is required in the watering, as it is just at this time, if given an overdose, that so many failures occur. Through the winter keep moderately dry. The following spring larger pots will be wanted, 10 to 12 inches, according to the strength of the plants. Drain them thoroughly, for this is of great importance. The best stiff fibrous peat, a little charcoal and coarse silver sand, is an ideal compost, using the rougher portions to cover the drainage. Keep the roots fairly well elevated, as deep potting should by no means be countenanced. The same treatment as for the previous year will be requisite, but as the growth will be much more robust the idea as to mode of culture should be noted.

If for exhibition the best system is to set a number of thin strings from the pot to the roof, training each shoot separately. A trellis should then be affixed (balloon shape for preference), and when the flower buds are showing the strings may be cut and the shoots tied neatly all over the trellis. If to be trained to the roof or rafters, it should be borne in mind that careful training to the wires is essential, as by so doing the flowers can be seen to greater advantage, and are more useful. Syringing should never be lost sight of, as it keeps away thrips and spider, whilst if mealy bug makes its appearance a little weak insecticide in the hands of a skilled workman and several syringings afterwards will soon eradicate it. Light doses of liquid manure about once a week, when root action is in full force, will be found beneficial.

VARIETIES.—All the varieties are most beautiful, and a few of the most popular are:—*D. amabilis*, which is handsome and one of the freest flowering varieties in cultivation, a good grower, the flowers pale rose on opening, afterwards deepening with age. *D. bolivensis* is a variety almost by itself as regards colour; the flowers are small, pure white with deep chrome eye. For all purposes, and especially in the hands of beginners, it is admirable, growing vigorously, and producing a great wealth of bloom with little trouble. The flowers of *D. Brearleyana* are of the richest shade of crimson, contrasting well with the ample dark green foliage. It is one of the best for the exhibitor. There are few quicker or more robust growers than *D. insignis*, with rosy purple flowers most freely produced. *D. Thomas Speed* is a grand rosy crimson flower with pale centre and a well-defined pale orange eye, making it quite distinct and beautiful. Then I have seen *D. Lady Louise Egerton* for several years past in fine condition at Messrs. Clibran's, Oldfield Nurseries, Altrincham. The flowers are the largest of all, and of extra texture, the colour being of various shades of rosy pink. Most growers are acquainted with *D. profusa*, a very popular sort. It lasts well, and the rich carmine flowers cannot fail to please. In conclusion, I may remind intending growers that no time should be lost in securing any available cuttings.—R. P. R.

Tecoma Smithi.

It is eight years ago since the Floral Committee of the Royal Horticultural Society awarded a first-class certificate to this hybrid variety. It was shown at the Drill Hall on October 10th, 1893, from the Royal Gardens, Kew, and at that time much attention was bestowed on this plant. The illustration shows how free flowering and handsome it is. The cymes are terminal, and of a luteous shade, tinged with brownish red. The parents of the plant were *T. capensis* and *T. velutina*. It will be conceded that few plants of this genus are handsomer or more attractive.

The Pruning of Hardy Trees and Shrubs.

(Concluded from page 326.)

To obtain the best results from flowering or evergreen shrubs it is very important that their proper pruning should be understood. A great many plants that are rarely pruned, from the general belief that if pruned they will not flower, as a matter of fact flower much more freely if pruned, but the pruning must be thinning, not cutting back.

Taking the Rose, the pruning of most of the garden varieties is, as a rule, well understood, and consists of cutting all the previous year's shoots fairly hard back, and thinning-out weak and inside wood. The pruning of species, however, is altogether different. In this case old worn-out flowering wood must be cut clean out, and the strong young wood left its full length; the same thing holds good with numerous hybrids, such as the *rugosa* and *Wichuriana* sections, the *multiflora* groups, and others. Such well-known garden varieties as *Gloire de Dijon*, *W. A. Richardson*, and *Grace Darling* do well treated in the same manner if last year's flowering wood is cut clean away and the strong young shoots that have grown from the base be bent over and pegged down, not shortened. Flowers will be borne from every bud.

This thinning-out holds good with *Rubus*, *Philadelphus*, &c. In the *Lemoinei* section of *Philadelphus*, as soon as the flowers are over all flowering shoots should be cut out or cut hard back to a strong break. By this means strong young shoots are enabled to grow during summer, which provide a wealth of flowers the following spring. If the members of this section are left unpruned they become perfect thickets, and produce few flowers. *Deutzias* should be treated in a similar manner to the tall-growing *Philadelphus*, thinned after flowering. The same may be said of *Diervillas*, *Loniceras*, and the majority of the shrubby *Spiræas*. The exceptions in the latter genus are confined to the *japonica* group. In this it is a good plan to cut the strong shoots back about half way, and well thin out the centres of the plants. *Berberis* are usually content with thinning after flowering; *Ribes* with thinning, and an occasional hard pruning when legginess is shown. *Rhododendrons* simply require thinning, and the flower heads removing before seeds are formed.

Magnolias will stand very little use of the knife, consequently as little as possible should be done to them. *Hydrangea paniculata* should be spurred back in spring to within two or three eyes of the old wood, then when the young shoots are 4 inches long a few strong ones should be selected to flower, and the remainder be removed. *Prunus triloba* should be spurred back hard after flowering. *Forsythias* are benefited by a fairly hard pruning as soon as the flowers are over, providing they are growing in rich soil, otherwise thinning only should be done. *Lilacs* require well thinning, and the good named varieties should have all weak, useless inside wood removed several times during summer to throw strength into the flower buds.

Cytisus and *Genistas* should be pruned hard after flowering when young. Old plants require thinning only. *Bamboos* require an occasional thinning out, which is best done in May. The coloured-stemmed *Willows* are greatly improved by an annual hard cutting back, the work being done in March. The colour of the foliage of the *Golden Elder* is much improved by hard pruning of the wood in spring.

Although there are many dissenting voices heard on the subject of pruning trees and shrubs, anyone who has given the subject proper attention, and carried out the work in a thorough and systematic manner, can but admit that it is a very necessary operation in their successful cultivation. People are too apt to connect pruning of trees with the hacking about often given to street trees, and called pruning. That is not pruning in the proper sense of the term.

Pruning is a very important operation, and should be entrusted only to thoroughly competent persons, not to unskilled labourers. Young gardeners, as a body, would do well to give the subject a share of their attention, for with the rapid advance trees and shrubs have made in public favour recently we cannot know too much about them or their cultivation.—W. DALLIMORE, *Kew*.



TECOMA SMITHI.



A Huge Pine Log.—Regarding the Pine log mentioned at page 325, we further learn that this remarkable product took thirty-two oxen two days to drag it eight miles, and eight days were consumed in freeing it from the bark; yet, despite its huge size, it was "lost" on its way down the Pearl River, Louisiana, to the coast, and was only recovered by accident. It is said that by the time it had reached Pearlinton it had cost twenty-five times its value as it stood in the forest.

A Tree for Town Planting.—According to the "American Florist," *Celtis occidentalis*, the Hackberry, is a tree well adapted to withstand the adverse conditions usually surrounding trees in cities. The bark is thick and rough, the numerous branches spread horizontally, and the leaves, about like those of the Apple, but more pointed, are a bright shining green. The tree is rare in our own islands, though specimens are to be found in botanic and a few other gardens. It is a native of the Southern States of America.

Hyacinth Leonidas: A Splendid Blue Variety.—Good blue Hyacinths, perhaps next to good crimson varieties, are subjects of great value to the person who delights in, or has to furnish, showy spring bedding. The effect of a fine oblong bed of the variety Leonidas, as viewed three weeks ago in the Royal Gardens at Kew, was charming beyond praise. When I first caught sight of the bonnie blue blaze (!) I was perhaps a couple of hundred yards off. The presentment was altogether too imposing even at a first glance to give one the idea that here was a grand bed of Glory of the Snow or of Squills. So I smartened my steps and blinked my eyes rather harder and quicker, but the blazen blue baffled me until I was close upon the bed. My curiosity was then well rewarded by the pleasing sight of a body of even-flowered spikes. The colour is blight sky blue with just a suspicion of white shading. This was the earliest variety in flower this year, and the site was one of the coolest and shadiest.—J.

Puddling Roots of Trees.—The practice of puddling roots of trees before packing them for shipment, says the "American Florist," is well worthy the attention of all nurserymen who have not yet adopted it. In many establishments the puddling is deemed as necessary as damp material for packing among the roots, the conclusion being the result of the experience of many years. A large water-tight box is set into a hole dug for it, deep enough that the sides of the box are on a level with the ground. This box is half filled with some stiff soil; if partly clay so much the better. Then water enough is poured in to render the soil into a thin mush. As the bundles of trees are brought in to be boxed or baled the roots are dipped into this mixture. The utility of this practice undoubtedly comes from the incasing of the surface of all the roots in a something which excludes air, and at the same time preserves moisture. Trees and shrubs so treated are far better prepared to stand a journey in a box for several weeks than those not puddled. So much better pleased are customers with trees so treated, because of their success with them, that it pays the nurseryman many times over to take the time to so prepare the trees.

Orchids at Highbury.—This is not the time for great displays of any kind of Orchid in masses, but recently at Highbury there were such, for instance, as *Dendrobium Wardianum*, now just passed, otherwise *Cattleya Lawrenceana*; *C. suavis*, *C. maxima gigantea*, very fine; *C. Mendeli*, *C. Schiøderiana*, *C. Claudia*, and *Lælio-Cattleya* making an attractive show; while *Dendrobium Findleyanum*, *D. Cybele*, and one or two other species, tended to make up for further variety by the beauty of their flowers. Of *Odontoglossums*, *O. Pescatorei*, *O. Edwardi* (an unusual purple colour), *O. odoratum*, *O. crispum* in vars., *O. Cervantesi*, of very fine form, were the chief of their family. Of *Masdevallias*, *Veitchiana*, *Shuttleworthi*, and *Shuttryana Chamberlainiana*, were the most conspicuous, including a fine form of *M. Dayana*. *Epidendrum Delliense* and *E. Obrienianum*, *Sophronis grandiflora*, *Tetramicra bicolor*, a small plant with pretty flowers, of *Ada aurantiaca* and *Vanda suavis*, with six spikes of its beautiful flowers, were the principal species in flower, and reflected much credit upon the skill and attention displayed by Mr. John McKay, the recently appointed grower from Kew.

The Golden Elder, *Sambucus plumosus aureus*.—This nicely serrate-leaved, yellow coloured variety of Elder is becoming yearly more liberally grown for pot purposes. It is easy to force, or at least to bring on in gentle heat, and thus furnishes a distinct and beautiful foliage plant for arranging along with such brilliant masses of floral colour which Azaleas and other hardwooded plants provide at this season. It is easily grown and readily propagated. As a shrubby plant it also finds considerable favour.

Primula Miss Masee.—Since this grand single Primrose was first introduced at Long Ditton it has become fairly well known. Not many of the ordinary garden Primroses deserve or receive varietal names, but when they are so conspicuously brilliant and rich as this one is, then a distinguishing name is very desirable. The corolla is like smooth velvet, and is coloured intensely deep blood-red crimson. The colour literally seems to shine. This is one of the most handsome and beautiful single border Primulas at present in existence.

A Choice, Hardy Flowering Shrub.—*Viburnum plicatum* is one of the most beautiful of the many valuable introductions from Japan. In the garden form of *Viburnum plicatum* all the flowers are sterile and flaring, making solid globose heads of pure white, which are brilliantly displayed by the rich deep green of the foliage. The Japanese Snowball, as the shrub is popularly called, is somewhat smaller in all its parts than the common Snowball or Guelder Rose, and is of more compact habit; leaves distinctly plicate. It is a very valuable shrub for small masses or as a specimen, flowering freely in the early part of the summer, and, moreover, the flowers persist for a considerable time. Except in very cold soils, or bleak situation, this fine subject succeeds exceedingly well. In the North it is always wise to select a sheltered site and porous soil.

Hardy Flowers of April.—When large nurserymen growers make endeavours to gather together a representative collection of hardy flowers, one sees what fine subjects there is at command. Mr. Amos Perry, of Winchmore Hill, staged a collection of alpine and early herbaceous plants recently at the Drill Hall, and here was included such choice subjects as *Mertensia virginica*, with pale blue flowers; purple and blue Primulas, also the double pale lilac-heliotrope *Primula acaulis lilicina plena*. The Wood Lilies (*Trilliums*) were here, and that rather rare, but beautiful, blue alpine gem named *Tecophilæa cyanocrocus*: the flowers are intense, yet bright, indigo blue. *Anemone Robinsoniana*, *A. vernalis*, *A. Pulsatilla*, and a new white-flowered species, *A. flaccida*, were each conspicuous.

Flower Toques.—Flower hats with their natural foliage, either green or sere-coloured, are more popular than ever, especially for theatre wear and for small dinners at the fashionable restaurants. They are made broad and flat, and are worn well over the forehead. Roses in all colours have been so much seen that they are not so well in favour among real *élégantes* just at present. But Lilies of the Valley, with their tender green leaves veiled lightly in vapouring pale green tulle, or Water Lilies and their flat brown-edged leaves veiled in russet-coloured tulle, are most chic. A delightful flowered toque, entirely composed of velvety Wallflowers in tones varying from deep red-brown to bright chrome-yellow, was lately seen and described in a contemporary. It had a few—very few—sprigs of the natural foliage mixed in between the closely pressed blossoms.

Greenhouse Rhododendrons.—If the hybrid Rhododendrons from Edinburgh (shown by Mr. A. McMillan in the Drill Hall), had no other attributes, they certainly laid claim to the distinction of noticeable and pleasant fragrance. The size of these new greenhouse Rhododendron trusses is well up to the standard of the best Veitchianum and other varieties or types. One of the forms used to obtain these newer varieties has been a large white seedling, which, so far, has no better name than McMillan's Large White. This came originally as a specially good and distinctive seedling from *R. Lady Alice Fitzwilliam*. The latter has also been much used in other crosses. It gives the quality of size and fragrance; *R. Veitchianum* has the effect of furnishing floriferousness and good habit. Some of the seedlings have been obtained from *R. ciliatum* crossed with the Large White, and the combined qualities of these two are conspicuously shown in the larger size, the early flowering, and the hardiness of the seedlings obtained. The colour of the seedlings, moreover, has been changed, giving a flower with a large amount of yellow, and fringed with white. *R. Countess of Haddington* has also had a large share in effecting changes and producing good, new sorts.



Pear Bergamotte Esperen.

ALTHOUGH this Pear is scarcely ever good from the open garden, yet, from either south, east, or west walls, it is always abundant and delicious. If I was restricted to two varieties of late Pears I would select Josephine de Malines and Bergamotte Esperen. I would therefore say, Save, ob! save, this grand old Pear from obscurity. —T. CHALLIS.

THIS Pear is a good late-keeping variety, and generally of finest quality when ripe. It succeeds well against a wall, and is fairly prolific when grafted upon the Quince, but less so upon the Pear stock. As a pyramid it is useless in the open in this northern part. —J. DAY, Galloway House, Wigtonshire.

PEAR Bergamotte Esperen is very reliable as regards cropping, either in the open or against walls. It usually pays well for a severe thinning of crop. Late gathering of fruit is also indispensable, and with all this the variety is, unfortunately, unreliable in ripening, only being really good occasionally. —W. IGGULDEN.

Royal Horticultural Society of Ireland.

A Reply.

I ASKED as to the ownership of the Chrysanthemums, because I understood (page 290) that the opinion of the readers of the Journal was solicited on the matter, and in such a case it did not seem right to take anything for granted. But, as Mr. Brock seems to wish it, I will take one other fact, which I will mention, for granted, and give my humble opinion for what it is worth. It will at all events be impartial, for previous to this correspondence I had never heard of Mr. Brock or his employer, and—this is to my shame—had forgotten, if I had ever heard of it, the existence of a R.H.S. of Ireland.

Having been judge and exhibitor at flower shows for about twenty years, I take for granted that there was a rule at the show in question that the articles exhibited should be the *bonâ fide* property of the exhibitor. Occasionally there is the addition of the words "or of his employer." Whether this addition existed in the rules of the show in question is evidently of the first importance. I take it for granted they were absent; if I am wrong all the rest of this letter falls to the ground, and the sole question remains, "Why did not Mr. Brock exhibit in his own name?" We are supposing, then, a rule that exhibitors must show their own property, and we have it that there was another that subscribers could show without fees, and non-subscribers must pay entrance fees; also that Mr. Brock was a subscriber, that his employer was not, and that no entrance fees were paid. Here is evidently a dilemma at the very start, before even the entry is sent in. Whether he enters himself or his employer as the exhibitor, Mr. Brock appears to be equally offending against the strict rules. He makes the entry in his employer's name, by so doing he offends against the rules. The society accepts the entry, and by so doing itself offends against its own rules. And this acceptance of the entry by the society does not "make it all right;" two wrongs never did, and never will, make a right. In this matter it appears that both Mr. Brock and the society are offenders against the rule. What is the meaning of it? Probably there is generally an understanding that in such a case this should be so. Such an understanding, however common, is a mistake; if the schedule and the rules are not followed strictly, there is sure to be trouble sooner or later.

What follows? Mr. Brock wins the handsome prizes, and, I suppose, his employer is published as the winner, and then the society finds out its trouble in accepting an informal entry, and tries to mend matters by serving both masters—the broken rule, and the "understanding" which evades it. It was well meant, but it looks as if they could not do what was strictly right now, anyhow. Perhaps (merely a personal opinion) the nearest approach to right and equity would have been to have sent all prizes to the employer, with a request, if thought necessary, to hand them on to Mr. Brock. If I am right in supposing that there was such a tacit understanding that an evasion of the letter of the law might be winked at in such a case, such a thing may work all right for a while; but when one of the parties to it, though full practical justice has been done to him, claims that the understanding should publicly override the rule, he is, to say the least, in my opinion, making a needless bother in the matter.

What is Mr. Brock's complaint? That the cheque was made jointly payable to his employer and himself, and that the cup was sent to his employer. In my view he has absolutely no case; it was he himself, I understand, who put his employer's name on the entry form. As a mere matter of form? Quite so; and, as a mere matter of form, the prizes were sent to him through the exhibitor whose name was on the card. And, as a matter of personal opinion, I should say that in ninety-nine cases out of a hundred this would have been satisfactory to all parties. The case shows the necessity of "playing the strict game," i.e., adhering absolutely to the letter of the schedule and the rules. When once that informal entry was accepted the rules were broken, and it was impossible to go by them afterwards.

The matter has also its comic side, as might be expected from dear old Ireland. Let us put the question before any experienced exhibitor, who has heard nothing of it hitherto, thus:—An exhibitor makes entry in three classes in an informal manner, the person put down as an exhibitor not being a subscriber, and no entry fees having been paid. He wins in these three classes a challenge cup, a silver medal, and £16. He gets these prizes all right; at least (barring the medal, of which we hear no more), if he has not got them now, it is because he has sent them back. Then follows a complaint to the Journal from a dissatisfied exhibitor. Who is he? Well, I think an unimaginative and practical Saxon would say, "Oh! no doubt the complainer is one of the other exhibitors in those classes—for choice, say the second or third prize men." Not at all; the fuss is made by the winner himself, and the complaint he makes and writes to the Journal about is—that the prizes were sent to the name and address of a gentleman whom he himself put on the card as an exhibitor! A mad world, my masters! —W. R. RAILLEM.

A Hall for Horticulture.

WHEN we read of a patriotic lady in Philadelphia, evidently an admirer, and anxious to forward horticulture in America, bequeathing £40,000 wherewith to build and maintain a Hall of Horticulture in that city, we feel that it is retrogression on the part of the British in not possessing one long since to carry on one of the greatest sciences of the nation. There are many amongst our wealthy who, in their time, have enjoyed an immense amount of happiness, luxury, and contentment from their garden, and who, we believe, will follow the noble example of this estimable and generous American lady, and immortalise their names by securing and presenting the freehold of a suitable site for that noble and most necessary institution—to hold their meetings, shelter their library, and the Council, who so nobly carry on the work for the benefit and honour of dear old England. We hope to live to see the day when we have a hall worthy of our great nation, and that the committee of the National Chrysanthemum Society, the members of which number well nigh 1000, and whose work and exhibitions are of great importance, and stand pre-eminent with that flower, may be invited, and see their way also to hold their shows and meetings in this building; and all special societies, such as for Roses, Dahlias, Auriculas, Carnations, &c., also the Gardeners' Benevolent Institution, Gardeners' Orphan Fund, and Gardeners' Provident Society, in fact, all societies pertaining to horticulture, have the same privilege, and thus avoid expensive hotels and other public resorts. This building we picture in our minds, and hope some day to see in reality. —H. CANNELL.

Scarcity of Journeymen Gardeners.

HAVING read the discussions on "The Scarcity of Journeymen Gardeners," I and many others are pleased to see that someone takes an interest in the young gardeners and their welfare. I have seen lads who have been apprenticed to the profession (and some have paid dearly for it, too), when they have served their time, say from two to four years, as pot washer and crocker, have then gone out as journeymen for 12s. or 14s. and both, and very often less. Can anyone, then, blame an active and smart young man for taking to the khaki? Even labouring pays better. In what other profession or trade dare they offer such a ridiculous wage to a man who has served his apprenticeship? It is as "G. H. C." says, "we are the laughingstock of the whole working classes." But what is to be done? How can it be rectified? I think if all head gardeners would stick up for higher wages for their men they would be appreciated. I know some do, but why do not all? All things would then work right in time, yet we seem to be about fifty years behind the rest of the world. We want pulling up a little, and who has the power to lend us a helping hand? Why, no one but our superiors. "G. H. C." asks, "Cannot the young fellows do anything?" What can they do? The only thing that I see they can do if they want more wages is to give it up (as many are doing at the present time), and take to something else, and I am afraid that if things do not alter journeymen will get scarcer still; and what then? Why the young fellows will be doing better for themselves, but where will the head gardeners be? —H. G. C.

Gadding and Gathering.

"HERE AWA', THERE AWA'."

WORDSWORTH'S feelings on viewing "a host of golden Daffodils" are shared by thousands or millions who are somewhat more tongue-tied than he was. Judging from the admiring throngs who cluster around the Daffodil mound to the east of No. 1 museum in the Royal Gardens at Kew, or who parade upon the beautifully adorned parterre in front of the Palm house, the public taste leans heavily in favour of these magnificent spring flowers. Tons and tons are weekly sold in London's streets, and in every other city's streets in these islands. The love for Daffodils is increasing year by year, and better varieties with finer characteristics are annually being offered.

Daffodils at Long Ditton.

Of course it takes perhaps from eight to a dozen years before the primarily high priced bulbs fall to a figure within the reach of growers having limited means. For instance, the beautiful *Narcissus Stella superba*, which almost everybody falls in love with when they see it, and which does so well with the Messrs. Barr at Long Ditton, was much too expensive to be bought by any but enthusiasts a few years back. Now, however, a dozen bulbs can be bought for 5s. or 6s. *Narcissus Monarch* was priced at 40 guineas a bulb last year. Then the varieties Big Ben, General Roberts, Peter Barr, King Alfred, Apricot, Weardale Perfection, and others, though they have been shown by the Messrs. Barr, and have been vastly admired by envious growers, are as yet beyond the reach of the general buying public.

I have seen these new varieties growing in their reserved enclosure at Long Ditton. About 100 crosses are effected each season by Mr. William Barr, and out of this number perhaps twenty may "take," and produce seeds. Then before the seedlings are brought to maturity, and prove their characteristics, a few years elapse. Mr. Barr (may we entitle him the Daffodil Prince, seeing his father is Daffodil King?) has one exceedingly handsome plant, not yet named, which has been under trial for fifteen years. This is about three times longer than it ordinarily takes to cross, raise, and prove a seedling *Narcissus*. In this variety the trumpet is very prominent, being $2\frac{2}{3}$ inches in length, measuring from the perianth, while the expanded diameter of the flower is $4\frac{1}{2}$ inches. To me, it was simply magnificent.

Hybridisers are now trying to improve the colours of Daffodils. If the orange or scarlet shades which are apparent in the coronas of so many varieties can be deepened, we may hope and expect something very startling ere we are much older. To point to what has been already done in this direction one has only to name *Narcissus Apricot*. The flower is small, but when this variety is seen early, and at its best, it is both conspicuously distinct and very beautiful. It will not suit everybody's taste of course; but here we have the germ of a promising future strain.

Cultivators of *Narcissi* differ in opinions, as doctors do. It is a widely prevalent belief that the bulbs are next to useless unless they are planted by the end of November at latest. Well, I certainly do not wish to propagate a system of late planting, but wherever circumstances conspire to retard the proper season for doing so, it may be taken as quite a safe practice to plant even so late as January, provided good and well kept bulbs are bought. At Long Ditton a numerous assortment, including all sections of *Narcissi*, were planted by way of experiment in January this year. At the present time they are flowering at the same time as others that were inserted six weeks or two months before them. The size and other characters of the flowers are such that one could scarcely say they were inferior to the best. A knowledge of this datum may induce gardeners and others to lay hold of the cheaper stocks of these bulbs for naturalising in the grass, or for any form of extensive planting. Two specially fine *Narcissi* for disposal in grasslands are Frank Miles and John Bain, the former being an incomparabilis, and the latter a *Burbidgei* variety. Of course the Poet's *Narcissus* cannot be excelled when seen on a verdant slope. One of the recent novelties at Long Ditton is a variety of the Poet's *Narcissus* named Glory. In size it is larger, but it does not appeal to me as having any other extra quality.

Before concluding these cursory notes the names of a few of the choicer introductions may be appended. It may be taken for granted that Weardale Perfection, priced at twelve guineas a bulb, has not yet gone far afield. It has a future before it, however, and will, like the old Horsefieldi, be in every garden some day. It is a magnificent bicolor trumpet. Madame de Graaff, with palest creamy trumpet and bold broad perianth segments, furnishes another magnificent and rare novelty; while Peter Barr, which is almost on the same lines, has yet its way to make. Apricot I am thoroughly in love with, as no doubt these notes amply demonstrate. Hon. Mrs. Jocelyn, King Alfred, Glory of Leiden, J. B. M. Camm, Victoria, Countess of Annesley, are all of them trumpet Daffodils of the first water.

Then, what of its section beats *N. incomparabilis Gloria Mundi*? Out of a score of varieties which have lasted for fully a week in a cut state, this one proves the freshest and the best. For massing in beds, it has a brilliant and telling effect. The beautiful Leedsi Maggie May has also won many admirers, and with it may be included Lobster, which,

however, is altogether distinct. This is one of Rev. G. H. Engleheart's seedlings, but has not maintained its first high standard of attractiveness. Nevertheless, it too is conspicuously beautiful when closely planted. Madame Plomp, Henry Irving, Duchess of Westminster, Barri conspicuus, Leedsi Catherine Spurrell, and Stella superba must also be named; and though the list is now lengthy, it should be borne in mind that these are only the names of the improved (and approved) varieties of the past few years. They have all an individuality of their own, and it would be well for our gardens to see many of them flourishing far and wide.—WANDERING WILLIE.

Obituary.

Mr. David Taylor Fish.

WE have to record the death of one of the *doyens* of horticulture, a personality highly distinguished as a practitioner, and one of the most versatile and pleasant horticultural literateurs we have had—Mr. David Taylor Fish. His initials, "D. T. F.," were familiar in all of the gardening journals; and his desire was always that gardening should be brought to a greater perfection, to the state of a real art and science.

It is four years ago since he practically retired to the home where he died in, at 12, Fettes Row, Edinburgh. His peaceful decease occurred quietly at five o'clock on Monday afternoon, April 22nd.

His early career was a prosperous one. He was born in the village of Old Scone, Perthshire, on September 25th, 1824. Like his elder brother, the late Mr. Robert Fish, his natural tendency drew him to gardening, and being within call of the Earl of Mansfield's world-famous estate of Scone Palace, he became apprenticed in the gardens there. At Putteridge Bury, where Robert Fish was for so long famous in flower gardening and in every other department, David joined his brother, this being his first venture from Scotland, and at an early age. Later, Mr. D. T. Fish was engaged in the nurseries of Messrs. Backhouse and Son at York, and Messrs. Knight & Perry's of London, a firm now non-existent. In these nurseries he mastered the cultural data of the hardwooded and other plants which fifty years ago were much more in favour than we find them to-day.

Mr. Fish began early to prepare himself as a ready writer, and as a lecturer, by attendance at gardeners' mutual improvement associations, which were then rather sparse. His first essay before an audience was on the culture of that homely vegetable "Celery." He proved himself to have been critically observant, for, whereas the practice hitherto had been to grow Celery in rather porous beds, Mr. Fish strongly insisted on a semi-aquatic system of culture, with abundance of manure. His theory—and he was correct—was that as Celery is always found in wet ditches in its natural state, so the culture ought to follow these conditions. During the term of his probationship at Scone Palace, he and a companion made it a practice to meet on certain nights of the week during the summertime, to discuss horticultural topics in the open air. That was the first "mutual improvement association" with which he was connected.

Our late friend was head gardener at Brook Hall, Suffolk, and at Hardwick House in the same county, where he remained during many happy, prosperous, and exceedingly busy years. In the "seventies," when the Royal Horticultural Society held its provincial show at Bury St. Edmunds, Mr. Fish's efforts toward making the show successful were so much appreciated that the Council conferred on him a 40-guinea life fellowship. In his earlier years he was a very successful exhibitor of vegetables, fruits, Orchids, and other flowers, for which he gained many prizes. He was editor of the horticultural portion of the "Agricultural Economist" for forty years, as also the section devoted to gardening in the newspaper named "The Bazaar, Exchange, and Mart." This, however, he gave up when editing "Cassell's Popular Gardening," a superior work in four substantial volumes.

For five years, from 1891, he gave many lectures in Cambridgeshire and district; while since he settled in Edinburgh he has lectured on horticultural subjects in Huntingdonshire, also Edinburgh, Dundee, Broughty Ferry, and other places in Scotland.

He has died at a ripe old age (77 years), leaving nothing but pleasant memories of his character and actions behind, and surely it may truly be said that his labours were not in vain—he left horticulture better than he found it.

"To all who dumbly suffered
His tongue and pen he offered;
His life was not his own,
Nor lived for self alone."

A widow and grown-up family survive him. He was laid to rest in Warriston Cemetery, Edinburgh.

Mr. John Thomson.

We regret to record the death of Mr. John Thomson, a partner in the firm of Messrs. Wm. Thomson & Sons, Ltd., at his residence, Tweed Vineyards, Clovenfords, on Saturday, April 27th.

Mrs. J. G. Baker.

We regret to record the death of Mrs. Baker, wife of Mr. John Gilbert Baker, F.R.S., F.L.S., late keeper of the Kew Herbarium. Death occurred on Tuesday, April 23rd, at her home in Kew. The interment took place on Thursday in Kew Churchyard.

Societies.

Royal Horticultural—Drill Hall, April 23rd.

Certificates and Awards of Merit.

The following awards were made by the Narcissus Committee on April 23rd:—Silver-gilt Flora medals to Messrs. Barr & Sons, King Street, Covent Garden, W.C., for group of Narcissi; silver Flora to Messrs. Bath & Co., Wisbech, for Narcissi; bronze Banksian to Messrs. Hogg & Robertson, Dublin, for Narcissi.

Carnation May (J. James & Son).—This variety has large creamy white flowers, that, as shown, do not burst in the calyx; the broad petals are quite smooth (award of merit).

Iris Willmottiana (Miss Willmott).—This plant grows from 12 to 14 inches high, and the strong leaves are borne up the stem; they are light green above and silvery beneath. The apical flowers are pale purple, with deeper markings, and a conspicuous white patch on the falls (award of merit).

Lælio-Cattleya Cybele (J. Veitch & Sons).—This bigener resulted from a cross between *L.-C. elegans* and *Cattleya Trianae*, but the character of the flower is somewhat suggestive of *L. purpurata*. The flower is large, and the sepals and petals, which are white suffused light purple, point forward. The large, handsome lip is white with a creamy throat; the apex is light and bright purple (award of merit).

Narcissus Early Grey (Miss Willmott).—A superb variety. The broad perianth segments are sulphur yellow, and the trumpet is straight, and pale yellow in colour (first-class certificate).

Narcissus Herrick (Rev. G. H. Engleheart).—To say this is a very fine variety of the poeticon section is almost sufficient description. The broad, spreading corona is crimson, and the perianth segments pure white (award of merit).

Narcissus Robert Berkeley (Miss Willmott).—This is in the character of *Sir Watkin*, and is a noble flower. The broad segments are white, and the spreading crown pure yellow (first-class certificate).

Narcissus St. Cecilia (Rev. G. H. Engleheart).—This belongs to the *Ajax* section, and reminds one of the *rugilobus* type of flower. The segments and the large frilled trumpet are pale cream (award of merit).

Odontoglossum Wilckianum, *Turnford Hall variety* (T. Rochford).—This is a very fine form. The sepals are sulphur yellow, with a considerable area of brown. The petals are broad and toothed; ground colour sulphur, with from four to six brown spots. The lip again is sulphur, with a fringed yellow apex and a patch of brown (award of merit).

Odontoglossum × Adrianae Crawshayanum (de Barri Crawshay).—A very small plant, carrying two flowers of splendid form. The broad segments are of medium size; ground colour buff shading to white, and the bases heavily spotted chocolate (award of merit).

Odontoglossum crispum Edward VII. (T. Rochford).—This variety is rather small, but the flower is perfectly round. The stout segments are white suffused with purple, and with chocolate marking. The lip is fine; ground colour white, and the markings brown (award of merit).

Odontoglossum luteo-purpureum, *Burford variety* (W. H. White).—The plant carried a grand spike of fourteen flowers. The bases of the segments are yellow, with very small brown dots; the remainder of the surface is light chocolate brown. The lip is broad, and the fimbriated margin is yellow (award of merit).

Oncidium Marshallianum sulphureum (W. Cobb).—This is a beautiful pale yellow form. The brown spottings so well known in the type had quite disappeared on the new comer (award of merit).

Primula obconica, *Kenmore strain* (Marchioness of Breadalbane).—A very beautiful strain; the flowers comprise shades of rose, red, lilac, and white (award of merit).

Primula viscosa Mrs J. H. Wilson (J. H. Wilson).—A lovely flower. The plant is dwarf and very floriferous. The round, flat flowers are wide open, and have a pure white centre (award of merit).

Royal Horticultural—Scientific Committee, April 23rd.

PRESENT: Dr. M. C. Cooke (in the chair); Messrs. Holmes, Bowles, Groom, Saunders, Odell, Houston, Chapman, Dr. Rendle, Prof. Church, Dr. Müller, Rev. Canon Ellacombe, and Rev. G. Henslow, Hon. Sec.

Peziza tuberosa.—Mr. Holmes exhibited specimens of this fungus, consisting of funnel-shaped cups, of a bright brown colour on an elongated stalk, arising from an irregular black tuber-like sclerotium. The mycelium preceding the sclerotium stage is said to be parasitic on the Wood Anemone.

Virescent Primroses.—He also showed flowers with slightly abnormal calyx, but with a virescent corolla. There were no stamens, but the pistil was malformed, being open and terminating above with styliform processes. In one, a portion of the placenta was parietal, the free portion carried a minute tuft of a foliar nature at the summit.

Carnation leaves injured.—Dr. W. G. Smith reports on the specimen sent to him as follows:—"On March 13th you sent some Carnation leaves with diseased tips. After examination they show no signs of fungi. It appears to me that the disease is due to either water

remaining on the tips after overhead watering, or to exudation of water at the tips. As only the ends of a few leaves were sent, no examination of rest of plant could be made. Useful suggestions on Carnation diseases—including, I think, this one—will be found in Proceedings of the Scientific Committee, June 19th, 1900 (Journal, vol. xxv., p. xxxiii.), also a report of my own, April 18th, 1899 (Journal, vol. xxiii., p. xxix.). A paper by Woods (pamphlet of U.S. America Department of Agriculture, referred to in 'Gardeners' Chronicle,' July 28th, 1900), which deals with a bacterial disease, would also furnish useful hints on treatment."

Helxine soleirolia.—Mr. Odell brought a specimen of this plant of the family Urticaceae. It is a native of Corsica, having very small leaves, and minute male and female flowers, somewhat resembling those of a Stinging Nettle. It is monœcious.

Schinus mollis, diseased.—Dr. Bonavia sent some leaves of this tree apparently diseased; Dr. M. C. Cooke undertook to examine them.

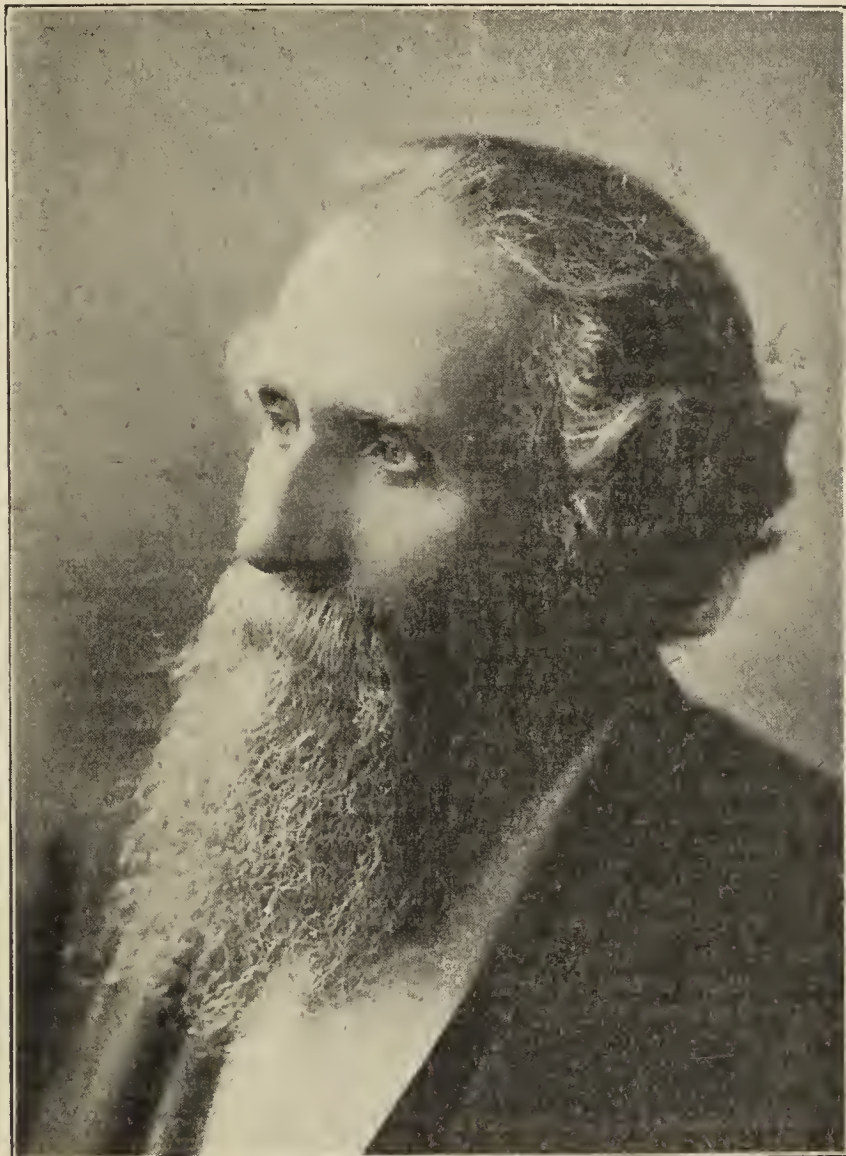
Oleander diseased.—Dr. W. J. Russell sent some leaves growing on "fine and hitherto very healthy pink-flowered plants in a conservatory; but while the rest of the plant looks healthy, several of the branches are fading; the attack coming from a point close to the main stem." They were forwarded to Dr. Smith for further examination.

Mistletoe at Oxford.—Mr. W. G. Baker writes as follows with regard

to this subject:—"With reference to the Mistletoe in the Botanic Gardens, I cannot find it recorded when it was first introduced. The following list contains all the trees upon which it grows here:—*Vigorous*: *Crataegus oxyacantha*, *C. o. var. rosea*, *Ostrya vulgaris*, *Æsculus* (Pavia) *flava*, *Cladrastis tinctoria*, *Tilia vulgaris*, Apple tree. *Moderate*: *Crataegus odoratissima*, *Acer monspessulanum*, *Juglans nigra*. *Weakly*: *Æsculus hippocastanum*, *Pyrus Aria*, *Salix alba*, *Fraxinus Ornus*. I have observed seeds germinate on the following trees, but have never got beyond that stage:—*Fraxinus pubescens*, *Diospyros virginiana*, *Pyrus intermedia*, *Cerasus serotina*, *Gymnocladus canadensis*, *Ailantus glandulosa*, *Corylus colurna*." Mr. Burbidge, who has forwarded Mr. Baker's communication from Oxford, adds:—"I have never seen it growing on the Beech or Viburnum, as stated in the 'Gardeners' Chronicle,' page 193, of March 23rd last."

Hepatica triloba alba.—Herr A. M. C. van der Elst, of the Royal Tottenham Nurseries, sent a flower of this rare variety. It was not stated whether it was a seedling form, or how it arose. Canon Ellacombe observed that it was known as an autumnal form of the double *Hepatica*.

Cattleya, deformed.—Mr. G. Cragg, gardener, Percy Lodge, Winchmore Hill, sent a remarkable form of *C. intermedia*. There were four flowers on the spike, the two lower ones being perfect. The specimen sent was one of the two upper flowers, both of which were deformed. The flower sent had two coloured sepals, situated laterally, and two lips.



MR. D. T. FISH.

one posterior, the other anterior, closely folded together. Within was a column without anthers.

Preparation of Woad.—An interesting paper was sent by Dr. Plowright, with numerous specimens, showing the production of the blue colour derived from this plant. After alluding to several ancient writers, who described the colour as blue, green, and black, Dr. Plowright could find no recent information as to how the colour was extracted; as, though *Isatis tinctoria* is cultivated round Wisbech, where the manufactory still exists, it is no longer grown for the dye, but for a fermentable substance which renders true indigo (*Indigofera* sp.), "fast." After experimenting he found how all the colours, blues, greens, and blacks, could be obtained. Full details, with chemical analysis, &c., will appear in the Journal of the R.H.S. A vote of thanks to Dr. Plowright for his valuable paper was proposed by Mr. Hughes, seconded by Dr. Müller, and carried unanimously. Prof. Church remarked that Chinese indigo is said to be made from Woad; the "balls" of pounded leaves being extremely like those made in India from the sp. of *Indigofera*. He observed, also, that different qualities occur at different stages of growth. He added that the colouring matter is not only produced in the leaves (in the chlorophyll cells, according to Dr. Plowright), but also in the seeds. These contain two colouring matters, the true indigo and erythrophyll, the ordinary red colour of flowers, &c. The ripe fruits of the Woad plant sent by Dr. Plowright were deeply stained naturally, of a dark violet colour.

The Midland Daffodil, Edgbaston, April 25th and 26th.

This counts the third exhibition that has been held under the auspices of the Midland Daffodil Society, and it must be a source of pleasure to its promoters and managers to know that, as far as quality was concerned, it was a distinct advance upon either of its predecessors. Both in the competitive and the non-competitive sections there were many superb flowers, some of which owed their beauty to richness of colouration, and others for size. In several of the classes the competition was so exceptionally keen that scarcely a point divided the prizewinners, and possibly another set of judges would have altered one or two of the positions. The secretaries of the society are the Rev. J. Jacob and Mr. Herbert Smith, who were assisted in the management of the exhibition by Messrs. R. Dean and W. B. Latham.

As illustrative of the importance of the fixture, it may be mentioned that the Royal Horticultural Society sent down a deputation of Daffodil experts who adjudicated upon the numerous seedlings, giving first-class certificates or awards of merit, according to the excellence of the variety. We give a list and a brief description of the chosen sorts below. The members of the deputation were Miss Willmott, V.M.H., the Hon. J. Boscawen, the Revs. Eugène Bourne, and Wm. Wilks, with Messrs. J. T. Bennett Poë, Alfred Pearson, and F. W. Burbidge. Messrs. J. Douglas, J. Duncan Pearson, P. Rudolph Barr, and P. D. Williams were pressed into the service of the examining body. All these gentlemen, with a few other guests, were entertained on the evening of Wednesday by Mr. Robert Sydenham in a manner which the Rev. W. Wilks subsequently described "immense hospitality." The gathering was at Mr. Sydenham's private residence in the Bristol Road, and was of wholly social character. It is just to Mr. Sydenham to add that he was the prime mover in the establishment of the Midland Daffodil Society, and it is doubtless to his skill as an organiser and to his striking personality that a position of such importance has been attained to in the short space of three years.

Competitive Classes.

Mr. R. D. Backhouse, Sutton Court, Hereford, staged handsomely in the class for fifty varieties of Daffodils, including representatives of each section, and secured the premier award, which took the form of the Barr cup. *Polyanthus Narcissi* were excluded, and all varieties had to be correctly and legibly named. Quality of bloom, correct naming, and tasteful arrangement were considered by the judges. Mr. Backhouse showed, amongst others, *Horsefieldi*, J. B. M. Camm, *Sensation*, C. J. Backhouse, *Almira*, *Gold Nugget*, *Campanula*, *Phyllis*, *Glory of Leiden*, *Barri conspicuus*, *Weardale Perfection*, *Princess of Wales*, *Madame Plomp*, *Emperor*, *Princess Mary*, *Lulworth*, *Apricot*, and Wm. Wilks. The second position was assigned to the Rev. J. Jacob, Whitechurch, Shropshire, who showed refined flowers of *Madame Plomp*, *Princess Mary*, *Sir Watkin*, *John Nelson*, J. B. M. Camm, *Queen of Spain*, *Beauty*, *Agnes Barr*, and *Lulworth* amongst others. Mr. F. A. Walton, The Friary, Handsworth, was third, and Mr. W. A. Caldicott, Coventry, fourth.

Mr. J. Douglas, V.M.H., Great Bookham, Surrey, seems to grow every kind of plant with excellence. He was first for twelve distinct Daffodils, magni-coronati, with grand examples of *Victoria*, *Horsefieldi*, *Weardale Perfection*, *King Alfred*, Mrs. W. T. Ware, *Madame de Graaff*, J. B. M. Camm, *Captain Nelson*, *Emperor*, *Madame Plomp*, *W. Goldring*, and *Glory of Leiden*. Mr. P. D. Williams, St. Keverne, Cornwall, was second with excellent flowers; Messrs. J. Pope & Sons, Kings Norton Nurseries, third; and A. S. Leslie Melville, Esq., Branston Hall, Lincoln, fourth. Messrs. J. T. White & Sons, Spalding, were easily first for six varieties of the same section. Their flowers of *Emperor*, *Madame Plomp*, *Horsefieldi*, *Victoria*, *Madame de Graaff*, and *Glory of Leiden* were all magnificent, especially the first and last named. Mr. J. Mallender, Hodsock Priory, Worksop, Notts, and Mr.

A. Cryer, gardener to J. A. Kenrick, Esq., Barrow Court, Edgbaston, were placed equal third; but some experts considered the former's set to be slightly superior to the latter's.

For twelve medio-coronati, distinct, Mr. P. D. Williams was a splendid first with *Sulphur Phoenix*, *Bitter and Eggs*, *Queen Sophia*, *Lulworth*, *Dorothy E. Wemyss*, *Nelsoni anrantius*, Mrs. Langtry, *Magpie*, *Flora Wilson*, C. J. Backhouse, *Katherine Spurrell*, and *Albatross*. There was not a weak variety in this stand, and some were remarkable for the intensity of the colour. Mr. H. B. Young, Metheringham, was second; *Gloria Mundi* was beautifully coloured. Mr. J. Douglas was a dangerously close third. For six varieties, the Rev. G. F. Eyre, Rock S.O., was to the fore with *Flora Wilson*, *Maurice Vilmorin*, *Barri conspicuus*, *Nelsoni major*, *Sir Watkin*, and *Duchess of Westminster*. The second and third prizes went to Mr. A. Cryer and the Rev. G. P. Haydon, Westbere, Canterbury, as named. Mr. P. D. Williams was easily first for six parvi-coronati, Mr. H. B. Young being second, and Miss Fanny Currey, Lismore, third. The winner showed *Chaffinch*, *Redbreast*, *Blood Orange*, *Cassandra*, *Horace*, and *Scarlet Runner*.

Messrs. Hogg & Robertson offered the prizes in a class for twelve distinct varieties, of which the bulbs had not exceeded 10s. a dozen. Mr. Chatwin Cartwright, Middleton Dene, Kings Norton, was first with a fine stand. The varieties were *Sir Watkin*, *poeticus ornatus*, *Horsefieldi*, *Figaro*, *Golden Spur*, *Princeps*, *Emperor*, *Grande*, *Cynosure*, *Barri conspicuus*, P. R. Barr, and *Empress*. Mr. J. W. Cunningham was second, and Mr. J. H. Hartill, Olton, third. Messrs. C. L. Branson, J. Sceaney, and E. M. Sharp were the successful exhibitors in a corresponding class for six varieties. Mr. Branson staged *Sir Watkin*, *Emperor*, Mrs. Langtry, *Barri conspicuus*, *rugilobus*, and *Grande*. Mr. F. W. Barbidge, V.M.H., originated the class for six varieties, open only to those who had never won a prize at any Daffodil show, and he provided the prizes. Mr. J. H. Hartill was easily first with *Sir Watkin*, *Barri conspicuus*, *Emperor*, *Horsefieldi*, *Grande*, and *princeps*. Mr. F. A. Walton was second, and Mr. W. M. G. Willows, Beckenham Villa, St. Ives, Hunts, third.

Mr. A. Cryer was deservedly placed first for twelve distinct varieties of Daffodils (*Polyanthus* section excluded) in pots, with *Horsefieldi*, *Figaro*, *Princess Ida*, *Leedsia amabilis*, *Barri conspicuus*, *Empress*, Mrs. Langtry, *Emperor*, *Sir Watkin*, *Cynosure*, *princeps*, and *albicans*. The second prize was awarded to Mr. J. Cooke, Corner Farm, Shrewsbury, and the third to Mr. F. A. Walton. Mr. R. C. Cartwright was first, Mr. J. Sceaney, Harborne, second, and Mr. E. M. Sharp, Edgbaston, third, for six pots. For six pots of *Polyanthus Narcissi* Mr. A. Cryer was first with splendid examples of *Maestro*, *Grand Primo*, *Mont Cenis*, *Grand Monarque*, *Jaune Supreme*, and *Gloriosa*. Mr. R. C. Cartwright was second, and Mr. R. Sydenham, Bristol Road, third, both showing well. Prizes were also offered for single Tulips, *Lily of the Valley*, *Cyclamens*, and *Lilium Harrisii*, but lack of space precludes our giving details. The prizewinners were almost wholly those of the three classes immediately preceding.

For a table decoration, Miss Elsie Swinden, Heigley Road, Edgbaston, was first, Mr. I. Cooke second, and Messrs. J. Pope and Sons third. The designs in each case were elegant. For a round table of cut spring flowers the Rev. J. Jacob was first, Mr. A. Cryer second, and Mr. I. Cooke third. Messrs. J. Pope & Sons, R. Sydenham, and W. B. Latham were the successful exhibitors of a bouquet of Daffodils. There were eight entries in the class for a bowl of cut Daffodils. Mr. F. A. Walton was placed first, Mr. J. W. Cunningham second (this exhibit was easily first), and Mr. A. J. Stiles, Spalding, third. For three bowls or jars of *Polyanthus Narcissi*, Messrs. R. Chatwin Cartwright, A. Cryer, and E. M. Sharp annexed the prizes in the order named; while for a corresponding class, exclusive of *Polyanthus* varieties, precisely the same order was maintained.

Certificated Daffodils.

New varieties were fairly numerous, and those enumerated herewith were specially honoured by the committee of experts.

Earl Grey (Miss Willmott).—A superb variety. The perfectly straight trumpet is soft yellow, and the segments cream (first-class certificate and silver medal).

King Alfred (J. P. Kendall, Newton, Poppleford).—As all Daffodil enthusiasts are now familiar with this magnificent large trumpet variety, a description becomes unnecessary (first-class certificate).

Og (Rev. C. Wolley Dod).—A fine bicolor; the broad spreading trumpet is pure yellow, and the perianth segments white (award of merit).

Robert Berkeley (Miss Willmott).—A most charming flower after the character of *Sir Watkin*. The segments are white, and the fringed crown sulphur (first-class certificate and silver medal).

Sunbeam (Mrs. R. O. Backhouse).—An attractive variety. The crown is glowing orange crimson, and the segments cream with yellow margins at the base (award of merit).

Sunrise (Mrs. R. O. Backhouse).—A lovely incomparabilis. The broad, flat segments are pure white suffused with yellow, and the broad spreading corona glowing orange red with a scarlet margin (first-class certificate).

Miscellaneous Exhibits.

Though the space in the corridor at Edgbaston Botanical Gardens was taxed to its utmost limits, it was not wholly occupied by the

competitive exhibits. As a matter of fact, the trade support the show in a most praiseworthy manner, contributing quality as well as quantity in Daffodils and other flowers. Messrs. Hogg & Robertson, Dublin, were represented by Tulips and Narcissi in considerable numbers, but the flowers were scarcely up to the firm's usual standard. Amongst the Daffodils we observed J. Bain, Sentinel, Golden Spur, Beauty, Nelsoni major, Hogarth, C. W. Cowan, Sir Watkin, Princess Mary, Queen of Spain, and the two splendid forms of Barri named respectively Maurice Vilmoren and conspicuus. The Tulips comprised Canary Bird, Couleur Cardinal, Hector, Ophir d'Or, Pottebakkers white and yellow, Jan Luikin, and Vermilion Brilliant. The stand arranged by Messrs. R. Wallace & Co., Kilnfield Nurseries, Colchester, was one of the most varied and interesting in the show. Erythroniums Hartwegi, revolutum, giganteum, and Johnsoni were represented, as was the much admired Arabis alba flore pleno. Then, too, there were Fritillaria meleagris and F. lanceolata, Lachenalia Nelsoni, Muscari conicum, Anemone remorosa fl.-pl., A. blanda, A. fulgens, Adonis vernalis, Trillium sessile californicum, Ornithogalum arabicum, and Gerbera Jamesoni, with Daffodils and Tulips in variety.

A collection of very fine single Tulips was sent by Mr. R. Sydenham, Tenby Street, Birmingham; all the best known varieties were included. This exhibitor sent also Narcissi grown in fancy jars. They were sent to illustrate the fact that these bulbs could be thus grown in cocoa-nut fibre refuse and crushed shell without the slightest drainage. Messrs. J. T. White & Sons, bulb growers, Spalding, exhibited some of the finest Daffodils in this section of the show; they had size, form, and splendid colour. The varieties were Van Sion, princeps, Orange Phoenix, Golden Spur, Maximus, Empress, Madame Plomp, incomparabilis plenus, Stella superba, magnificent Emperors, and poeticus Queen Bess. Messrs. Dicksons, Ltd., Chester, sent an exhibit of some extent in which Tulips and Fritillarias were added to the numerous Daffodils. Conspicuous amongst the latter were capax plenus, Sulphur Phoenix, C. J. Backhouse, Sensation, P. R. Barr, Glory of Leiden, Madame Plomp, Mrs. Walter Ware, Goliath, Emperor, and Empress. Hardy alpine plants came from Messrs. T. S. Ware, Feltham. They included Schizocodon soldanelloides, Shortia galacifolia, Iris iberica, Gentiana acaulis, Aubrietia Campbellsii, Saxifraga Rhei, Doronicum Clusi, and several charming Primulas. Messrs. Ware also showed a number of Daffodils comprising the popular varieties. Messrs. Hewitt & Co., Solihull, staged floral designs, and Messrs. Gunn & Sons, Olton, splendid Narcissi in variety; the flowers were beautifully clean and well selected. Mr. L. Brown, Brentwood, showed Essex-grown Daffodils in fine character.

Messrs. Barr & Sons, Covent Garden, were in great form with Daffodils, and staged a collection that well maintained the splendid reputation of the firm. There was an almost endless selection of varieties, of which we cannot pretend to give more than a few. There were Lady Grosvenor, Captain Nelson, Lucifer, Stella superba, Triandrus pulchellus, Victoria, P. R. Barr, M. M. de Graaff, Madame de Graaff, Una, Weardale Perfection, Hogarth, Barri conspicuus, Duchess of Westminster, Apricot, Gloria Mundi, Emperor, and several seedlings. Messrs. R. H. Bath, Ltd., Wisbech, sent a large collection, amongst which were W. Wilks, W. P. Milner, Emperor, Golden Spur, Queen of Spain, Michael Foster, John Nelson, Mrs. Walter Ware, Weardale Perfection, M. J. Berkeley, Victoria, and Glory of Leiden. The majority of the flowers were slightly past their best. Messrs. J. R. Pearson & Sons have evidently found a congenial home for their Daffodils at Lowdham, for they showed some grand flowers on this occasion. Where all were so good it seems invidious to make a selection, but we may name Madame de Graaff, Beauty, Flora Wilson, Weardale Perfection, Dreadnought, Mary Anderson, Queen Bess, Frank Miles, Katherine Spurrell, King Alfred, Glory of Leiden, Grandee, Colossus, Goliath, and Robin Hood.

The Dinner and Conference.

To still further increase the interest and value of the gathering Messrs. J. Pope and R. Sydenham arranged for a dinner and conference to be held on the first evening of the exhibition, to which all the principal visitors and exhibitors were invited to attend. Messrs. P. Rudolph Barr and F. W. Burbidge, V.M.H., were announced to lead the discussion, the subjects chosen being "The Naturalisation of Daffodils in Grass," and "Manures for Daffodils." Both spoke from experience, and their remarks were listened to with the keenest attention. Several valuable hints were given by the leaders, as well as by the several gentlemen who joined in the subsequent discussion.

The National Auricula and Primula, Midland Section.

April 25th and 26th.

This show was held in conjunction with the Midland Daffodil Society's exhibition, and suffered as a consequence, for the flowers were crowded in a far too limited space, and the refined Auriculas were somewhat obscured by the more imposing Daffodils. However, the Midlanders are enthusiastic, and professed themselves delighted with the flowers and with the show. The competition was not very keen, but many excellent flowers were staged in both the Show and Alpine sections. Mr. J. Douglas was almost invincible in the former, and several local growers showed admirably in the latter.

For six Show Auriculas, distinct, Mr. J. Douglas was first with Abraham Barker, Mrs. Potts, Mrs. Dodwell, Hero, Geo. Lightbody, and

Acme. Mr. J. Stokes, Harborne, was a fair second, and Mr. R. Holding, Balsall Heath, third. Mr. Douglas was also first for four varieties, dissimilar, with Geo. Rudd, Monarch, Ruby, and Magpie. Mr. J. Clements, Harborne, was second, and Mr. J. W. Bentley, Stakehill House, Castleton, third. For pairs, distinct, Mr. A. R. Brown was first, with John Spalding and Conservative; Mr. J. W. Bentley second with Gerald and Mrs. Woodhead; and Mr. S. T. Healey, Leicester, third with Buttercup and Conservative. For a green-edged Mr. J. Douglas was first with Dr. Hard, and second with F. D. Horner; Mr. A. R. Brown was third with Mars. Mr. J. Douglas was again first and second for a grey edge with Geo. Rudd and Geo. Lightbody; Mr. J. W. Bentley was second. For a white edge Mr. J. Douglas was first and second with Acme, and Mr. J. Clements, Harborne, third with Heather Bell. For a self Mr. J. Douglas was first with Cleopatra, and second with Raven; Mr. J. Clements was third with John Spalding.

The prizes in the Alpine section were more keenly contested, and Mr. Douglas was not quite so dangerous. For six distinct Mr. A. R. Brown was first with capital plants of J. F. Thew, Thetis, Fred. Knighton, John Allen, Mrs. Gorton, and Urania. Mr. J. Douglas was second, and Mr. R. Holding third. For four distinct Mr. J. Douglas took the lead amongst eight competitors with Duke of York, Firefly, Fearless, and Urania, a very fine set. Messrs. A. R. Brown and R. Holding were second and third. For a pair Mr. J. Godwin, Handsworth, was first with Dean Hole and Mrs. H. Turner; Mr. W. W. Cheshire second with Dr. Knott and Bright Eyes; and Messrs. J. Pope and Sons third. For a single plant, gold centre, Mr. E. Danks, Aston, was first with Dean Hole; Mr. J. Douglas second, and Mr. A. R. Brown third, both showing Firefly. For a light centre Mr. A. R. Brown was first with Bella Wheelwright, very fine, and second with Thetis; Mr. R. Holding was third.

In the class for four gold-laced Polyanthus Mr. J. Stokes was the only exhibitor, and was adjudged the premier prize. He staged fine plants of George IV., Miss Turner, Mrs. Brownhill, and Exile. For a single plant, Mr. J. Stokes was first with Exile, and second with George IV. For a group of Primulas, Auriculas, or other alpine plants, in box or basket, Messrs. J. Pope & Sons were easily first; the basket contained excellent blue and double Primroses, with Primula denticulata and P. Sieboldi in variety. Mr. J. Clements was second with a box of Auriculas.

Norfolk and Norwich Horticultural.—April 25th.

The spring show of the Norfolk and Norwich Horticultural Society was held in St. Andrew's Hall, Norwich, on Thursday, the 25th of April. The number of entries was slightly below the average, owing to the backward season; but the quality of the exhibits was of the usual high order. The Norwich spring show is always rather meagrely attended, which is surely surprising, for one would conclude that the townfolks, after the dull winter months, would delight to see an exhibition of plants and flowers. The hall was admirably laid out, and was pleasing alike to the eye and to the sense of smell. The tables were filled with bright-coloured flowers and great masses of foliage, while here and there tempting dishes of fruit were displayed. The season has been an exceptionally bad one for spring flowers, but still the total number of entries was but slightly below the average. The entries of fruit had increased very largely over those of the previous year, while in every other class there was a decrease. The judges were as under:—Cut flowers, Rev. T. H. Marsh, Mr. Chas. Daniels, and Mr. H. Ocle; pot plants, Mr. H. H. Back, Mr. O. Corder, and Mr. William Allan; fruits and vegetables, Rev. A. J. Back, Mr. J. E. T. Pollard, and Mr. John Green; extra classes, Mr. Bishop and Mr. F. Atkinson. The attendance on Thursday was 1167, and the receipts £37 Od. 6d., compared with 1556 and £48 8s. Od. last year.

Narcissi, of course were a leading feature. The society's president for the year is the Rev. T. H. Marsh, a well known grower of Narcissi, who, as usual, exhibited a box of seedlings from his garden at Cawston. There were three entries in the class for thirty six distinct varieties, three blooms of each, and so keen was the competition, that after a lengthy deliberation the judges finally decided to divide the first prize equally between Captain Petre and Mr. G. W. Miller.

Mr. B. E. Fletcher secured a well merited first for his twelve bunches of exotic cut blooms, his Orchids and Carnations being very good. Col. Rous was second, his most striking bunch being one of the curious Bottle Brush flowers. Mr. F. Randell had some fine Orchids in his first prize box of six bunches exotic blooms. To Westwick House belongs the local championship of hardy flower growing, and again Captain Petre maintained his reputation by securing an easy first with twelve fine massive bunches in the class for hardy flowers. Mr. O. Corder was again a good second; Colonel Rous was third. Mr. B. E. Fletcher was first for six bunches of hardy flowers. Pansies showed up well in their paper collars, but a backing of Ivy leaves as arranged by Mr. F. Randell seems to give them more of a "horticultural" appearance. Mr. Thos. Chaplin was an easy first here. The Tulips from Colonel Rous were first. Though small, the colour and markings were distinct. Violets were a pleasant class, the six bunches from Mr. A. Cator being arranged in nice pyramidal bunches—a good departure from the usual flat style.

The pot plants were rather weaker than usual. Hippeastrums were conspicuous by their absence. Azaleas, too, were very poor specimens.

Gloxinias, from Mr. W. J. Birkbeck, were profusely covered with bloom of good texture and colour. The Auriculas struggled to make a display, but were only worth a passing notice. Six bulbous plants from Mr. J. E. Cooke were very fine, while Col. Rous had sent a mixed lot, including an Orchid. Caladiums from Mr. W. J. Birkbeck were, as when sent from Thorpe, in fine condition. Mr. F. P. Hinde was a well merited second, his plants though smaller having good colour. Calceolarias were very small plants compared with what we have seen at spring shows. Mr. J. E. Cooke snatched first from Mr. F. Randell.

The fruit classes were well represented. Captain Petre and Mr. T. B. Lennard took the leading prizes for Pears. Mr. A. Bunting had six fine examples of cooking Apples named Annie Elizabeth, which secured an easy first. Dr. Beverly took the first for dessert Apples with Court Pendu Plat. Captain Petre was first for twenty-four Strawberries, which, though not so large as those exhibited by Mr. J. E. Cooke, who was second, were much better in flavour. Mr. A. Bunting had fine berries of good colour, which were a well-merited third. Lord Suffield and Mr. T. Chaplin were first and second respectively for twelve berries. Col. Rous had a collection of fruit containing local grown Oranges and a Pine Apple, which seemed to have suffered badly from the change of habitat. Mr. W. Joice was first for a plate of early Tomatoes, the variety being a local one of repute named Holmes' Supreme. Mrs. Lubbock was first for a collection of vegetables and salad. Lord Suffield exhibited a fine Cucumber, the variety being that named after the well-known gardener there, W. Allan. Mrs. Lubbock was first also for a brace of Cucumbers and for spring Cabbages of good sound hearts, and first also for French Beans. Mr. W. Joice staged some lengthy Asparagus.

Miscellaneous Exhibits.

Messrs. Daniels Bros., Ltd., made a splendid exhibit with nearly 100 choice varieties of Narcissi, which were a decided attraction. Besides most of the well-known older favourites, Messrs. Daniels' collection included a fine array of such new and very choice sorts as Madame de Graaf, a most exquisitely formed creamy trumpet variety; Glory of Leiden, an immense yellow; Madame Plomp, Samson, Victoria, L'Innocence, Mrs. Burbidge, Queen of Spain, Duchess of Westminster, Lulworth Beauty, Gloria Mundi, Katherine Spurrell, and many other beautiful kinds.

Mr. G. W. Miller, Clarkson Nurseries, Wisbech, again brought some fine blooms of Narcissi from the district of the Fens, which is fast gaining ground as an ideal bulb-growing country.

Hobbies, Ltd. (John Green of Dereham), had a stand well filled with choice Ferns, Palms, and plants. Particularly noticeable was a collection of two varieties of Geraniums—Mrs. Henry Cox and Mrs. Parker. The first is a bright golden tricolor, and the second a silver leaf with a pretty pink double bloom, which is rather a novelty. Attention was demanded by a Japanese product, the Fern Davallia bullata, the fronds protruding from an oval mass, and making a very pretty window ornament. Some nice specimens of the Crimson Rambler Rose and of blue Primroses also made a brilliant display.

Messrs. Cant & Co. of Colchester had a fine exhibition of cut Roses, chiefly of the Tea varieties, all beautiful alike in form and colour.

The Chester Paxton Society.

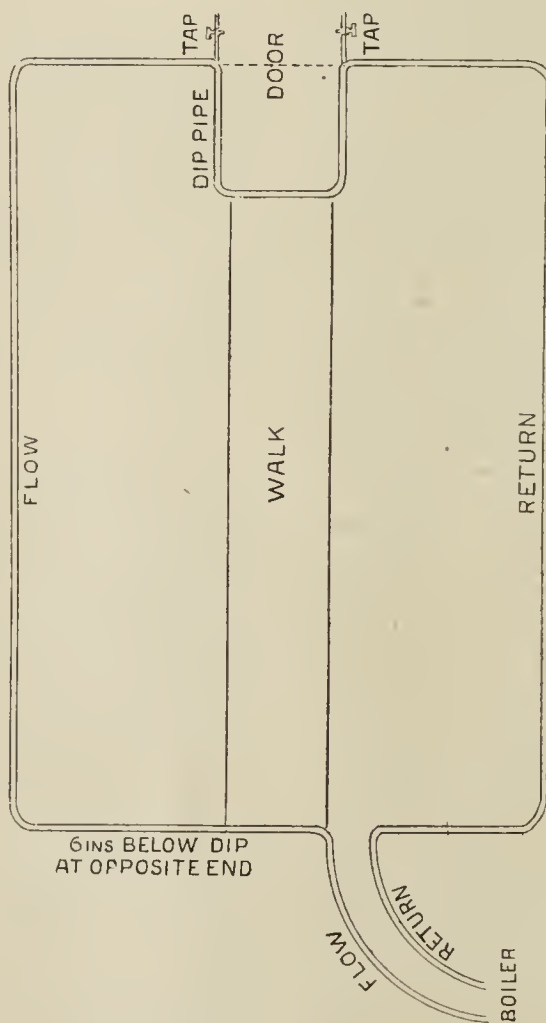
The third annual exhibition of spring flowers was held in the Grosvenor Museum on Thursday and Friday last; the number of exhibits exceeding those of previous years. As on previous occasions, the largest exhibit was sent from the gardens of the Duke of Westminster, per Mr. N. F. Barnes. The principal features of this exhibit were a collection of Daffodils, chief among which were Emperor, Empress, Duchess of Westminster, Minnie Hume, princeps, and Stella. Intermixed with these were specimens of Schizanthus, which are always so prominent a feature in the long corridor of Eaton about this time of the year. Other notable flowers in His Grace's collection were the new Star Cineraria, double pink flowering Cherry, Azalea mollis, Tulips in great variety, Lilacs, Tea Roses, and Carmichael's hybrid Azaleas in fine form. Next in order of merit to this collection was an exhibit sent from Dr. Mules, Gresford, who is famous for the cultivation of hardy border flowers of all kinds. The principal feature of this exhibit was a magnificent group of Narcissus Madame De Graaff, each bloom showing boldness and perfection, which left nothing to be desired. Good examples of N. Mary Anderson, Queen of Spain, albicans, and

Horsefieldi, were also shown, as well as American Fritillarias, single and double hybrid Primroses, Anemones, &c. His Honour Judge Wynne Ffoulkes, per Mr. H. Rowe, staged a beautiful collection of Daffodils and Star Cinerarias. Miss Humbertson of Newton Hall, per Mr. Wakefield, was also well represented by a large and varied collection of Daffodils, Jonquils, Anemones, Hyacinths, Tulips, and Doronicums. Mr. Thomas Weaver, gardener to Mrs. Townsend Ince, Christleton Hall, sent a lovely collection of Tulips, Daffodils, Grape Hyacinths, Mignonette, &c. Mrs. Pitcairn Campbell, Vicar's Cross (gardener, Mr. Ryder), and Mr. Edward Dixon, Littleton Hall (gardener, Mr. John Dutton), sent select exhibits of Tulips, Jonquils, sweet scented Violets, and Fritillarias. Mr. John Taylor, Hoole Hall, sent some choice varieties of Narcissi and Auriculas. Messrs. Dicksons, Limited, and Messrs. McHattie & Co. (local nurserymen), each staged small but select collections of Narcissi. All the exhibits were greatly admired by the visitors, and the president, Mr. N. F. Barnes, and the secretary, Mr. G. P. Miln, were congratulated upon the success of the show.

Reading Gardeners' Mutual Improvement Association.

At the last meeting of the winter and spring session of the above association a good attendance of members assembled to hear a paper on "Early Potato Culture," given by Mr. W. P. Lusham, who treated the subject in an exceedingly interesting manner.

Reference was made to the methods adopted by the growers in the Canary Islands, Cornwall, Jersey, Scotland, &c., to produce Potatoes for the English markets. The whole was made more interesting by limelight pictures, illustrating the routine of work in the districts named. A discussion followed, in which Messrs. Neve, Lees, Hinton, Fry, Wilson, Gibson, Powell, Barnes, and Stanton took part. A splendid display of flowers was made on this occasion, to which the following contributed:—Mr. G. Stanton, Park Place, varieties of Schizanthus, Magnolia conspicua, M. conspicua Soulangiana, Celsia gigantea, Azara microphylla; Mr. Exler, Redlands, two plants of Phaius; Mr. E. S. Pigg, Samoa, Cymbidium Lowianum; Mr. F. Lever, Hillside, Cineraria stellata in various sized pots, and a William Allen Richardson Rose grown from a cutting inserted in August, 1899, bearing fifty-six blooms (cultural certificate), whilst Narcissi were shown in large numbers; Mr. W. Townsend, Sandhurst Lodge, exhibiting forty-four varieties; Mr. A. G. Nichols, Strathfieldsaye, twenty-two varieties; and Messrs. Sutton & Sons, ten varieties.



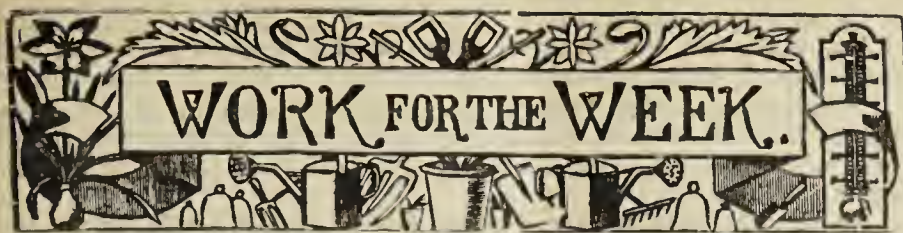
A Problem in Heating Solved.

IN fixing hot-water pipes in glass structures a great difficulty is often experienced in carrying them across a walk near a door, without dipping them beneath the walk.

When such "dips" occur, all gardeners know how difficult, if not impossible, it is to maintain a regular circulation of hot water. During frosty weather, when fires are only lighted occasionally, it often takes hours to get the water to circulate beyond such points, and I suspect most of us have during our career spent a few hours during the lonely "watches of the night" in attempting to keep out frost where the pipes had been badly arranged. Recently I was shown a simple method of overcoming the difficulty which I think is worth recording.

Mr. T. Marsh, of The Priory Nursery, Warwick, who at the time of my visit had just completed the heating of a new house, drew my attention to it. In this case a single pipe has been taken round the house a few inches below the point where the roof joins the wall. At the opposite end from the boiler this pipe had to cross a doorway, and it was necessary to give a dip of at least 3 feet. As an experiment an air tap was fixed at the point where the pipe "dipped," and also on the opposite side of the door, where it again rose to the usual level. By leaving these taps open for a short time after the water becomes heated the circulation is everything that can be desired. There is one other vital point in connection with the matter which must have attention—viz., where the pipe enters the house near the boiler it must be at least 6 inches lower than the lowest point of the dip at the opposite end of the house.

I enclose a sketch, which will make matters quite clear, and I think hosts of gardeners throughout the country will be interested in the matter.—H. D.



Hardy Fruit Garden.

Strawberries.—Weeds of a strong rooting character, which have established themselves in permanent Strawberry beds, should be forked out cleanly. Annual weeds, now showing as strong seedlings, can be cut down with the hoe on a sunny day, when the heat of the sun will quickly destroy them. The removal of weeds may take place at the same time as the dry and withered mulching material, the remains of that applied in the autumn. Having cleansed the ground, well established plants should receive some stimulating assistance, which will enable the bloom to advance strongly, and the roots to be of a vigorous fibrous character, which augurs well for the perfecting of the crop.

Artificial Manure.—At this season of the year there is a lack of nitrogen in the soil where the plants appear backward in growth or somewhat pale in colour. This may be remedied to a great extent by applying nitrate of soda, which is an excellent manure for Strawberries on dry soils, affording a dressing at the rate of 2 lbs. per rod, or 1 oz. per square yard. Crush the manure fine, and sprinkle it round the plants, and not over or among the crowns.

Soot.—A dressing of soot is beneficial, applying it round the plants during a showery time, or when the soil is moist after rain, at the rate of a peck to a rod, so as to make the soil black. Soot may also be applied mixed with water and poured round the plants. Besides acting as a fertiliser it is a deterrent to slugs, and the use of it now will prove serviceable in preventing these pests attacking the ripening fruit later on.

Liquid Manure.—The drainings of stables and cowsheds, or the general liquid collected in cesspools or from manure heaps, are useful in enriching and moistening the soil. This stimulating food may be used freely in the case of old plantations from the time the flower buds show until the fruit is ripening. Where the liquid is particularly rich and strong, dilute it with a proportion of water or soapsuds.

Mulching.—This is an excellent time to afford the usual spring mulching of farmyard manure, selecting material of a rich character, containing half strawy materials and half short dung. Spread a good dressing of this evenly between the rows of the plants, and at intervals, should the weather prove dry, copiously drench the mulching with water, in order that the fertilising elements it contains may be washed into the soil, and conveyed in direct contact with the roots. The rains will also assist in washing the goodness out, and by the time the fruit commences to ripen the mulching material will have a bleached and clean appearance, and provide a rest for the ripe fruit of Strawberries.

Young Strawberries.—Plantations formed late in autumn, or early in spring, are seldom in a sufficiently well-rooted and strong condition for bearing fruit, even if disposed to do so. Comparatively weak plants will in many cases show bloom trusses freely, but in order not to weaken them further it is desirable to nip these out, and thus enable good growth and bold crowns to be made for the succeeding year. It is well that the flowers should appear, because it is then certain that the stock is of a fruitful character. Any plants which do not produce bloom trusses should be at once discarded, as it is probable they never will do so, and cannot do other than cause confusion in an otherwise fruitful and reliable stock. Hoe among the spring planted stock to promote growth, and destroy seedling weeds. Mulching with rich manure is not necessary for these at present. Immediately runners form cut them off close to the crowns.

Raspberries.—Raspberry stools usually produce more suckers than are necessary, hence, when the best can be distinguished, remove the weak and superfluous. A liberal mulching of manure of a rich and juicy nature may be spread between the rows, so as to conserve moisture and keep the roots cool and moist during hot weather. When fruit is set liquid manure may be poured over the mulching, considerable soluble food being washed into the soil thereby.

General Mulching Fruit Trees.—Summer mulchings of manure over the roots of fruit trees, especially where the fibres are near the surface, are upon the whole beneficial, because they tend to keep the soil in a medium state as regards moisture. The present is a suitable time to apply such dressings, the soil now becoming well warmed by the sun, and much moisture will soon be evaporated. Young newly planted trees require some such assistance to keep the roots in a cool, moist, yet warm medium, so that growth may extend in a steady manner.

Staking, Disbudding, Training.—It is important that all trees not yet well established be kept upright by having a stake to each firmly placed in the ground. Newly planted trees especially must be kept firm, not only to preserve their shape, but so that wind will have less power upon them, and prevent the roots being moved out of position, as they must be when the trees are wind-rocked. Some soft material, such

as cloth, should be wound round the stems, and the trees secured to the stakes with strong tar twine. As the growths push over the trees make a selection of the best in the most suitable positions for extending the desired shape and preventing overcrowding. Commence to nail or tie out shoots of wall trees that have extended of sufficient length, as by doing so the vacant spaces are filled up.

Fruit Forcing.

Cucumbers.—Plants in bearing all the winter will now be showing signs of exhaustion, and would be best removed, cleansing the house, providing fresh soil, and putting out young plants without delay. This is far better than renovating old plants, and there is no very material break if care is taken to have strong plants ready for placing out, which come into bearing within a few weeks; indeed some turn out large plants, and by cropping lightly have no break in the succession, as Cucumbers cut young will keep plump and fresh several days with their heels in saucers of water. Young plants coming into bearing will be the better for removing the male flowers and most of the first fruits, stopping at two or three joints beyond the fruit, removing all weakly and unnecessary growths. Encourage a free root action by adding fresh warmed soil to the hillocks or ridges as the roots protrude, sprinkling a little fertiliser on the newly added soil, such as superphosphate of lime, three parts; double sulphate of potash and magnesia, two parts; and a mixture of equal parts air-slaked chalk lime and dry soot by measure, using a good handful, 3 or 4 ozs., per square yard. This must always be sprinkled on the freshly added soil, and not applied directly on the roots.

Little fire heat will be required by day in fine weather, shutting off the heat about 8 A.M. and opening the valves at about 4 P.M., maintaining adequate moisture by damping the paths and other surfaces in the morning and at closing time. Maintain, however, a night temperature of 65°, and 70° to 75° in the day by artificial means. Aphides are sometimes troublesome, and may be subdued by tobacco, either in the form of vapour or smoke, taking care not to give an overdose, having the foliage dry but the floor well damped; the latter is especially necessary where there is white fly to contend with. Soapy solutions are neither safe nor desirable for use on Cucumber foliage. For white fly and red spider fumes of sulphur are effective. The sulphur must be applied carefully, as an overdose on the hot-water pipes at a high temperature is almost as injurious to the plants as are the pests. The fumes of sulphur are also fatal to mildew.

Sow seed for raising plants to occupy pits and frames. A fair amount of bottom heat should first be secured by using the less decomposed material from Rhubarb, Seakale, Vine border, or exhausted hotbeds, which, with about a fourth material, will afford all the bottom heat now required. The linings of beds made up some little time must be attended to, renewing as required. Maintain the night temperature as near as may be at 65° to 70°, ventilate a little at 75°, and keep through the day at 85° to 90° from sun heat. Close early, so as to rise to 90° or more, and protect well at night.

Peaches and Nectarines.—*Early Forced Trees.*—On the very early varieties the ripening fruit must be kept dry, also the foliage; but the border should not be allowed to become very dry, or it will act prejudicially upon the growth, and affect the formation and maturation of the buds for future bearing. As the fruit of the other varieties will not be ripe for some time, keep the atmosphere moist by frequent sprinklings during the day, syringing in the morning, and again when closing the house. The night temperature will be perfectly safe at 65° to 70°, but 5° less, though it will retard the ripening, will not retard the energies of the trees so much as the higher temperatures.

Fruit Stoning.—During this process the trees must not be hurried, 60° to 65° at night is ample, and 70° to 75° by day, avoiding high night temperatures and sudden fluctuations by carefully attending to the ventilation. A little air admitted at night will prevent the deposition of moisture on the foliage through the night to any serious extent, and enlarge the openings when the sun acts on the house, yet without lowering the temperature, which should advance with the power of the sun, and a corresponding increase of the ventilation. Avoid anything calculated to dry the atmosphere suddenly, such as fumigation and opening the ventilators widely after the sun has acted for some time on the house, for the effect is to cripple the foliage, when the fruit from the check may be seriously imperilled, and fall. Early closing is to some extent desirable, and an advantage in swelling the fruit to a good size, but it must not be continued too long. It is also advisable to allow a little extra latitude to the growth, but on no account permit foliage to be made that must afterwards be removed in quantity. Keep the inside border well supplied with water, and avoid undue excitement at the roots by stimulating them with quickly acting nitrogenous manure, in either solid or liquid form. Judicious feeding, however, is a great aid to trees when stoning, but let it be of a phosphatic, potassic, and magnesian nature. The surface of the border may be mulched lightly to keep it moist and attract the roots.

Trees Swelling their Fruit.—These swell more at two periods—namely, after setting until the commencement of stoning, and after this process is completed the fruit swells rapidly. The first is materially, if not entirely, influenced by the previous storing of matter in the trees and the available food in the soil, but a genial condition of the atmosphere accelerates the swelling of the fruits, and the means employed

to secure a good root action, which is best effected by a judicious and gradual regulation of the growths by the process of disbudding and in thinning the fruits. Overcrowding is a great evil, but large reductions of foliage at one time as well as fruit are not good. There is no safety save in a steady progressive growth and careful disbudding. The more vigorous the trees the greater is the danger of the fruit being cast in stoning, and the evil is afterwards increased by severe disbudding, also by a close and moist atmosphere. In the last swelling after stoning tie the shoots down so that the fruits may be fully exposed to the light, but moderate extension of the growths will materially aid the fruit in swelling, care being taken that the principal foliage and fruit be not interfered with. Supply water thoroughly to inside borders when necessary, and liquid manure to weakly trees.

Strawberries in Pots.—The present is a trying time to forcers of Strawberries in vineries and Peach houses, for, however good the management, red spider appears. Arrangements will need to be made so as to have a succession of plants, and crops that are ripening too fast may be retarded in various ways for several days, in case an extra supply is needed for particular occasions. The expedients are turning the plants so that the fruit will be from the sun, shifting a north house, or removing to an airy fruit room or shed after the fruits are fully ripe. Much can be done at this time of the year with judicious management. Plants can be accommodated in cold or low-heated pits, and if they have the pots plunged in ashes, with the plants well up to the glass, but leaving room for a circulation of air to play between the glass and the leaves, will make sturdy development, and the forward plants from these structures can always be picked to take the place of those that have the fruit ripe and ripening. Supply liquid manure at every alternate watering to plants swelling the crops, but care must be taken not to give it too strong.



* All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

R.H.S. Examination (J. E. J.).—Many thanks; we will see what can be done, if space permits, and will be glad to hear from you again.

Hardy Climbers (Able).—*Ampelopsis (Vitis) hederacea*, *Clematis vitalba*, *C. montana* major, *C. viticella*, and *Jasminum nudiflorum* are all very hardy. Have you tried some of the Ivies, especially the Irish Ivy? Many plants not strictly climbers can be employed.

Cucumbers not Swelling (P. R.).—There are indications that fertilisation has not been satisfactorily effected. Possibly at the time of flowering the weather was dull, and the atmosphere of the house too moist for the free dispersion of the pollen. Try artificial fertilisation, or pollination, rather, with a few flowers, and do not keep the atmosphere so moist.

Vines "Weeping"—Leaf Burning (W. J. M., Clonmel).—The large sap globules, dewdrop-like, hanging from the Vine leaves, especially on a cloudy or moist morning, and noticed at this time of year, particularly in the earlier hours, are, no doubt, due to transpiration from the surfaces of the leaves, and the condensation of moisture thereon present in the atmosphere in result of the lowering of the temperature during the night. The transpired and condensed moisture naturally, by gravitation, finds its way to the edges or depressions of the leaves, and there acts prejudicially on the cuticular cells, preventing evaporation, and in consequence the leaves often, quite apart from sun, become brown or black, being destroyed in the tissues where the water has remained for a considerable time. But the great evil is sun acting powerfully on such foliage whilst the house is closed, thus heating the condensed moisture on the leaf surfaces, and then air is admitted freely, inducing rapid evaporation and cooling of the moisture-laden margins or spots, causing a chill. Some, therefore, attribute the browning to the heating, and others to the chilling, both right or both wrong from their respective standpoints. As this does not occur in Nature, leaf-burning or scorching being practically unknown, evaporation being free and proportionate to the sun's power, and gradual increase of atmospheric evaporation, similar conditions under glass are the best preventive; it being advisable to leave a little ventilation through the night, and thus allow evaporation to proceed in the early morning, and the accumulated vapour to gradually disperse with advancing sun. Of course the great point is to increase the ventilation with the early rising of the sun, having the ventilators opened judiciously in the early part of the day, and until this scorching and scalding is avoided.

Vine Border Tester (J. L. A.).—Mr. Alex. Kirk of Alloa Park, Alloa, N.B., was the inventor. Most of the larger nurserymen and horticultural sundriesmen should surely be able to supply the article.

Caterpillars on Wall Trees (Reader).—They appear to be the caterpillars of the Hawthorn or black-veined butterfly (*Pieris crataegi*) and may be destroyed by first syringing the trees and then dusting with white hellebore powder.

Strawberry Runners for Forcing (A. F. Harlow).—To secure the best and strongest plants for very early forcing, we would advise you to grow special plants to produce runners. The flowers ought to be kept pinched off from these, so as to give the runners every encouragement. These runner-producing plants should be in an open, sunny place, and the young plants may be taken off in July.

Salting Walks (J. T.).—Boards placed on edge will prevent the grass and Box being injured. Use the common agricultural salt, and apply it in dry weather. The longer it is visible on the walks the more effectual is it in the destruction, or, what is better, the prevention of weeds. The walks should be made white, as if covered with a slight shower of hail. Why not try the more expeditious weed killers as advertised? They are thoroughly effectual.

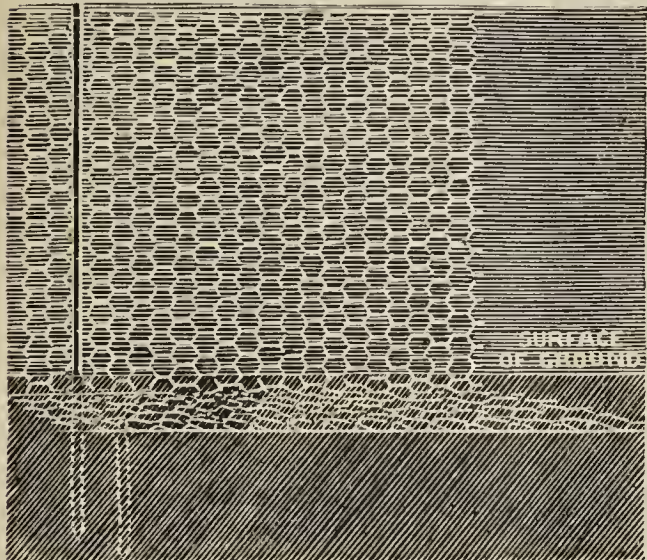
Book on Table Decorations (J. F.).—We are not acquainted with any up-to-date work solely devoted to a description of table decorations. We have a small work entitled "Flowers for Ornament and Decoration, and How to Arrange Them," by Miss Maling. This little book was published by Messrs. Smith, Elder, & Co., 65, Cornhill, London, in the year 1862. It can only now be had second-hand. If you would care to have it for a little while let us know, and send postage.

The Cherry Aphis (Arthur Storrs).—This aphis (*A. cerasi*) is one of the most difficult to destroy, especially when it is permitted to increase and cover the trees. The quassia solution to which you refer is made by boiling 4 ozs. of quassia chips for fifteen minutes in a gallon of water, then adding other four gallons of water before syringing the trees. If to this you add a solution of softsoap of the strength of 3 ozs. to a gallon of water, and a quart of tobacco liquor, the application will be still more effective. Mr. Abbey found that 3 to 4 ozs. of nicotine soap, dissolved in a gallon of water, destroyed the Peach, Cherry, and Plum aphis without injuring either foliage or fruit.

Growing Dandelion for Salading (E. W.).—The large leaved French and also Improved Very Early Dandelion, are only valuable for salads when blanched, being too tough and too bitter when green for almost any palate, though in that state, and chopped up, fowls eat them with avidity and are bettered in health. The seed should be sown in rows a foot apart in April, thinning the plants to 6 inches distance asunder. If the soil be in good heart, and the ground kept free from weeds, good roots will be formed by November, when they should be lifted and stored in sand in a shed or roothouse, so as to be at command as required for forcing during the winter. In a dark situation, such as a Mushroom house, the plants force readily, the roots being planted in moist soil level with the crown, and the tops cut off about an inch above it, fresh and blanched leaves are produced. When grown in the open ground it is necessary to cover the plants with light, close material, about 6 inches deep or a little more, first cutting off the tops to the ground or just above the crowns, and when the growths peep through the covering materials they are fit for use, the covering being removed and the plant cut over at the crown, so as to retain the leaves intact. Sifted coal ashes, or preferably cocoa-nut fibre refuse, are suitable for covering. By tying up the leaves like Cos Lettuce only the central part of the plant is blanched, and there is a great waste, as the outer leaves must be stripped off, the heart only being suitable for salads.

Profitable Longevity of Peach Trees Under High Culture (W. C.).—In the Peach-growing countries of Europe and North America, twelve to twenty years is regarded as the average profitable longevity of Peach trees under high culture, this being in the open air. In this country the trees are not grown much as standards, but for the most part as dwarf trained trees to walls or trellises under glass, and examples are not uncommon of considerable age and large proportions, some over forty years of age, and in good health and profitable production. These, however, are the exception rather than the rule, and from our experience we consider trees of over twenty years planted are on the decline, and in most cases better uprooted, and new trees planted in new borders. A great deal, if not everything, depends upon the soil and management. Mr. Rivers mentions a tree grown in a pot for over forty years; and owing to the annual cutting out of old wood and providing new in its place, trees trained to walls and on trellises are constantly rejuvenated, so that they, having a good substantial soil and a good area of space, remain healthy and fruitful for a long time, examples of trees much older than yours being occasionally met with, as before named. In other cases the trees, whether from climatic or soil conditions, are prone to gumming, and can only be kept healthy and productive by frequent recourse to lifting the trees and renovating the borders. In that way the trees are kept in good condition for a great many years. There are instances, however, in which this procedure does not succeed, or so well as removing trees that have passed their best, and which experience has proved are more profitably replaced by young trees. On these points only knowledge of the actual doings affords a safe guide, of which you have the example of young trees doing better than the old. There may be other reasons for retaining the old trees, and the wishes of the proprietor should always be conformed to as far as practicable.

Pelargonium Duchess of Teck (R. M.).—We have asked Mr. Cannell about the matter; we should say a seedling. However, you will probably hear through these columns next week. Your truss was exceptionally fine, yet you will find that the Floral Committee are very sparing in recommending awards to such flowering plants as Fancy Pelargoniums.



A RABBIT-PROOF FENCE.

Rabbit Fencing (H. B.).—The illustration seems to speak so well for itself that text is needless. You observe the base part of the fence also has a piece of netting. Rabbits cannot burrow so freely with such a fence confronting them.

"Calvary Clover" (Alice Baker).—Our correspondent tells us that she has been a reader of this Journal for over

forty years. Curiously, within the last three weeks two other correspondents have gladdened our hearts by stating the same thing; both had been forty years' readers. We can only express the hope that we and they may enjoy pleasure at the shrine of Our Journal; and we wish that all old readers will still have a warm and pleasurable regard for our long-established paper. The editorial efforts will not wane if health be spared us. Coming to your query, "A. B.;" you are correct in assuming that the seed vessel is that of *Medicago Echinus*. When the vessel is fresh it is almost round in shape, with its spines laced together; it then uncoils to liberate the seeds that lie within. These are brown, kidney shaped, and a quarter of an inch in length. It is carrying the superstitious belief far enough to say that the seeds must be sown on Good Friday.

Names of Fruits (F. J.).—Cobham. (R. S.).—1, Newtown Pippin; 2, Hoary Morning.

Names of Plants (J. T. Thurston).—*Juniperus communis* var. *fastigiata*. (J. D., Kent).—*Bignonia Tweediana*. (T. Todd, Leicester).—1, *Spiraea Thunbergii*; 2, *Oxalis Martiana*; 3, *Begonia fuchsioides* var.; 4, *Begonia Ferdinand de Lesseps*; 5, *Eupatorium riparium*; 6, *Eupatorium adenophorum*. (*Pinus*).—1, *Abies Douglasii*; 2, *A. orientalis*; 3, *Cryptomeria japonica*; 4, *Thuja japonica*. (A. L. S.).—1, *Prunus Pseudo-Cerasus* var.; 2, *Prunus triloba* fl.-pl.; 3, *Forsythia suspensa*. (J. Gibson).—1, *Brodiaea uniflora*; 2, *Erica carnea*; 3, *Narcissus incomparabilis* Beauty. (Mrs. Milner Barr).—Our address is 12, MITRE COURT CHAMBERS, FLEET STREET, E.C.; we left the other address over three years ago. Please number your specimens; and for the sake of safety use string instead of bast when tying card-board boxes. The *Narcissus* is *Johnstoni* Queen of Spain; the bluish flower is *Brodiaea uniflora*; and the other yellow-flowered shoot is *Forsythia suspensa*.

Phenological Observations.

(Extracted from Mr. Mawley's Report of 1899.)

MAY.

- 1.—Corncrake heard at Chirnside, Berwick.
- 6.—Swift first seen at Marazion, Cornwall; and at Churt, Surrey, on the 9th.
- 7.—Wheatear seen at Marazion; orange-tip butterflies unusually abundant at Chesham.
- 19.—Mayfly first seen at Churt.
- 20.—Medlar first in flower at Killarney.
- 26.—Potatoes blackened by frost at Newmill.
- 27.—Strawberries at Beeston blackened by frost. A bad spring for bees. Hawthorn blossom abundant around Palé, Merioneth.
- 28.—Sharp frost cut off nearly all early Potatoes at Farnborough.

MAY 3RD TO 9TH.

- 3 Fri. Chestnut in flower.
- 4 Sat. Pettychaps heard.
- 5 Sun. Lattice Heath-moth seen.
- 6 Mon. Greenfinch builds.
- 7 Tu. Long-eared bat seen.
- 8 Wed. Turtle dove heard.
- 9 Thr. Burying beetle seen.

PLANTS DEDICATED TO EACH DAY.

- Poet's *Narcissus*.
- Stock "Gilly flower."
- Apple tree.
- Globe-flower.
- Asiatic Globe-flower.
- Lily of the Valley.
- Solomon's S-al.

Covent Garden Market.—May 1st.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, cooking, bush. ...	5	0 to 7	0	Oranges, case ...	15 0 to 25 0
" Tasmanian, case ...	12	0	15	Pears, ½ case ...	9 0 10 0
Cobnuts, doz. lb., best ...	6	0	0	Pines, St. Michael's, each	2 6 4 6
Grapes, Hamburgh, lb. ...	4	6	5	Strawberries, lb. ...	3 0 5 0
Lemons, Messinas, case	9	0	12		

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	0 to 3	0	Leeks, bunch ...	0 1½ to 0 2
" Jerusalem, sieve	1	6	0	Lettuce, doz. French ...	1 0 1 4
Asparagus (Spruce Grass)	0	0	10	Mushrooms, forced, lb. ...	0 8 0 9
" English, 100 ...	8	0	9	Mustard and Cress, pnnt.	0 2 0 0
" Giant, bundle ...	15	0	20	Onions, Dutch, bag ...	5 0 0 0
" Spanish, bundle ...	1	9	2	" English, cwt. ...	5 0 0 0
" Paris Green ...	6	0	8	Parsley, doz. bnchs. ...	2 0 3 0
Batavia, doz. ...	2	0	0	Potatoes, cwt. ...	3 0 7 0
Beans, French, lb. ...	1	0	1	" New Jersey, lb	0 5 0 6
" Jersey, lb. ...	1	3	1	Radishes, doz. ...	0 9 1 0
Beet, red, doz. ...	0	6	0	Rhubarb, doz. ...	1 0 1 3
Broccoli, bush. ...	0	0	1	Savoy, tally ...	4 0 5 0
Cabbages, tally ...	3	0	5	Scotch Kale, bushel ...	0 6 1 0
Carrots, doz. bnch. ...	2	0	3	Seakale, best, doz. ...	14 0 16 0
Cauliflowers, doz. ...	1	0	2	" 2nd, doz. ...	6 0 8 0
Chicory, Belgian, lb ...	0	4	0	Shallots, lb. ...	0 4 0 0
Corn Salad, strike ...	1	0	1	Spinach, bush. ...	4 0 5 0
Cucumbers, doz. ...	2	6	4	Tomatoes, Canary, case	4 0 4 6
Endive, doz. ...	1	3	2	" English, lb. ...	1 0 1 3
Greens, bush. ...	1	0	1	Turnips, doz. ...	2 0 3 0
Herbs, bunch ...	0	2	0	Turnip tops ...	0 9 1 0
Horseradish, bnch. ...	1	2	1	Watercress, doz. ...	0 6 0 8

Average Wholesale Prices.—Plants in Pots

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz. ...	12	0 to 13	0	Ferns, small, 100 ...	10 0 to 16 0
Acers, doz. ...	12	0	24	Ficus elastica, each ...	1 0 7 6
Aralias, doz. ...	5	0	12	Foliage plants, var., each	1 0 5 0
Araucaria, doz. ...	21	0	30	Fuchsias ...	9 0 10 0
Aspidistra, doz. ...	18	0	36	Genistas, doz. ...	8 0 12 0
Aspidistra, specimen ...	15	0	20	Geraniums, scarlet, doz.	6 0 10 0
Azaleas, various, each ...	2	6	5	" pink, doz. ...	8 0 10 0
Boronias, doz. ...	20	0	24	Hyacinths, doz. ...	6 0 12 0
Cinerarias, doz. ...	6	0	8	Hydrangeas, white, doz.	18 0 24 0
Crotons, doz. ...	18	0	30	" pink, doz. ...	18 0 24 0
Cyclamen, doz. ...	8	0	10	Lycopodiums, doz. ...	3 0 4 0
Dracæna, var., doz. ...	12	0	30	Marguerite Daisy, doz. ...	8 0 12 0
Dracæna, viridis, doz. ...	9	0	18	Mignonette, doz. ...	6 0 9 0
Erica, various, doz. ...	8	0	18	Myrtles, doz. ...	6 0 9 0
Euonymus, var., doz. ...	6	0	18	Palms, in var., doz. ...	15 0 30 0
Evergreens, var., doz. ...	4	0	18	" specimens ...	21 0 63 0
Ferns, var., doz. ...	4	0	18	Pelargoniums ...	10 0 12 0

Average Wholesale Prices.—Cut Flowers

	s. d.	s. d.		s. d.	s. d.
Arums, doz. ...	1	6 to 2	6	Maidenhair Fern, dozen	4 0 to 6 0
Asparagus, Fern, bunch	1	6	2	bnchs. ...	4 0 to 6 0
Azalea, doz. bnchs. ...	4	0	5	Marguerites, white, doz.	3 0 4 0
Camellias, white, doz. ...	2	6	0	bunches ...	3 0 4 0
Carnations, 12 blooms ...	1	6	2	" yellow, doz. bnchs.	2 0 3 0
Cattleyas, doz. ...	10	0	12	Narcissus Ornatus, doz.	1 0 1 6
Daffodils, doz. bnchs. ...	1	0	2	Odontoglossums ...	3 0 4 0
Eucharis, doz. ...	2	0	0	Roses, Niphetos, white,	1 0 2 0
Freesia, doz. bnchs. ...	1	6	2	doz. ...	1 0 2 0
Gardenias, doz. ...	2	0	3	" yellow, doz. (Perles)...	2 0 0 0
Geranium, scarlet, doz.	4	0	6	" red, doz. ...	2 0 0 0
bunches ...	4	0	6	" Catherine Mermet, doz.	2 0 4 0
Hyacinths, doz. bnchs. ...	8	0	0	Smilax, bunch ...	3 0 4 0
Lilium lancifolium album	2	0	3	Spiræa, doz. bnchs. ...	4 0 6 0
" rubrum ...	3	0	5	Stock, white, doz. bnchs.	2 0 2 6
" longiflorum ...	2	0	3	Tulips, white, doz. bnchs.	10 0 12 0
Lilac, white, bunch, ...	3	0	0	" red ...	6 0 8 0
Lily of the Valley, 12 bnchs.	8	0	12	Violets, single, doz. bnchs.	0 9 1 0
Mignonette, English, doz.	6	0	9	" double, doz. bnchs	1 6 2 6

Next Week's Events.

- 4th.—Royal Botanical Society meeting; Société Française d'Horticulture de Londres meeting.
- 7th.—R.H.S. Committees; Royal Gardeners' Orphan Fund (annual dinner at Hotel Cecil); Scottish Horticultural Association meeting; Croydon Gardeners' "Mutual."

Trade Catalogues Received.

John Peed & Son, Mitcham Road, Streatham, S.W. also Roupell Park, Nurseries, West Norwood, S.E.—*Hardy Perennial Plants, Alpine Plants, Florists' Flowers, &c.* (Will Messrs. Peed please notice our present address?) *Cannas and Dahlias, catalogue from the same*
 William Sydenham, Tamworth.—*Early Flowering, Hardy, Decorative, and Pompon Chrysanthemums.*
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Mr. Rider Haggard on Tour.

A SECOND Arthur Young. A man desirous of seeing for himself how matters agricultural stand in various parts of England. He does not trust to books or other people's versions, but he will have the knowledge at first hand. Farming portions of his own property in Norfolk, he is quite alive to the difficulties and disasters which beset the path of the farmer. He has ever been a close observer of Nature, and is as much at home on the African veldt as on the Wiltshire Downs or the high Wolds. Never, we fancy, will the tour of any man be read with greater interest than this which Rider Haggard has now begun. To landowners great and small, to farmers, and all connected with agriculture, the topic is one of vital interest. To outsiders the writing is so easy, and the descriptions so picturesque, that they will read on and on, though they barely know what arable means, and could not for the life of them point out salient features of stock.

We are just having the census returns, which fully endorse our worst fears as to the depopulation of rural parts. Of course, some districts are worse than others, but the cry is the same all over—the people leaving the land and crowding into the cities, not altogether for the sake of the work, but in a great measure for companionship, and for other doubtful blessings of civilisation. One good parson, writing to a well known daily paper, suggests that better footpaths and electric lighting would do much to keep the people at home in the villages. Well, as to the footpaths, that want is becoming supplied; electric light seems further off. We know a large agricultural village with asphalt paths and gas lamps, but it is just about at a standstill with regard to population. Will some of the Journal chaplains—for we have several—throw out a few suggestions? They are men that think, and also they are men that know the country people, and their words of wisdom would carry weight.

Mr. Haggard takes the south of England first, and Salisbury Plain is the title of the first paper. There is much food for reflection in some startling facts connected with the first farm visited: 700 acres of Down land sold in 1812 for £27,000, ploughed up for Wheat when Wheat was at a remunerative price. Now, again, alas! the owners would prefer the short sweet grass, but that refuses to grow. Sequel—the 700 acres fetched in 1892, £7000. There is no mistake here, the 20 has disappeared, and for ever we fear. Twenty-seven years ago the rent was £600 with £196 tithe. To-day the rent is £250, and the landlord pays the tithe, and the farmer says he made bigger profits when he paid the old rent. What can the landlord have in pocket? What is to become of the small landowner, the man with heavy mortgages to meet, and only falling rents to meet them with? There is only one solution to that problem, a short word of four letters—RUIN. The large men and rich, though they feel the pinch, are still able to help their tenants by adjusted rents, and by suitable and necessary buildings. A man cannot build or do even the barest repairs out of an empty pocket.

There is one great beauty of a Down farm. No drains, no fences, but as there never was an Eden without a serpent, water carting may become rather more than a pastime. Here the farmer and the dairyman work in a sort of partnership; the farmer finds the dairyman with cows at £10 per head, the farmer feeds and takes charge of them when dry, and keeps the calf. What the dairyman makes over the £10 is profit. Mr. Haggard had not heard of this system before, but the same thing is often done with respect to a foreman's cow, or, perhaps, if he boards many lads, his two cows; and mind you, does not the foreman see they are well fed? Of course here it is sheep, always sheep, and Sainfoin seed makes a better return than Wheat, 44s. per quarter. The labour question here is most acute; no Swedes pitted for want of hands. On this farm *only one young man left*. What can be done? labour can only be minimised up to a certain point, and when we read of a farmer cowmanless, with thirty cows on his hands, which he must milk himself twice a day, seven days a week, the question assumes great proportions. Another farmer has to bring his three sons home from school on Saturdays to do the Sunday milking, as the men will not.

Just another case of farm rents. In 1870 a farm, the rental of which had been £2100, is now let for £825, tithe free. Another, £1 per acre, 13s., and out of that 13s. per acre the landlord pays 5s. for

tithe, does the main repairs and half the minor ones. Very short working hours and few men under fifty years of age, and as these if parted with cannot be replaced, they can practically dictate their own terms.

Mr. Haggard gives an account of the wonderful success that has attended the establishment of small holdings at Winterslow. Major Poore bought a farm in 1892, sold off 80 acres at once, and the rest was divided into portions varying from 1 rood to 16 acres. Some lots were sold outright at once at the rate of £15 per acre; the rest pay up principal and interest in fifteen years. In 1901 there is not a defaulter, or one who has fallen into arrears. Besides this, on the estate over thirty houses have been erected, some with six rooms, some smaller, all well built and good. Money has been borrowed to the extent of £6000 to build these houses. Mr. Haggard tells us of three of these landowner occupiers—one is a woodman who works at hurdle making, felling the greater part of the year; another finds employment on a farm; and a third is a baker. That the land cannot be first rate is proved by the price paid for it; and yet in a cold, ungenial neighbourhood, with lack of water, these holders are paying their way and bringing back to the land her sons. At Bishopstone, some ten miles away, Major Poore tried a similar experiment on a larger scale, and instead of paying by instalments the holders have taken over the land at once, and are doing well. We do want some more particulars; our appetite is only whetted. We should like to know what these men grow, where are their markets, and a thousand and one other particulars. If a scheme like this will answer at Winterslow and Bishopstone, why not elsewhere? We could think that in cases like this the village credit banks might do good and useful work. We have heard of land as cheap as this, but never seen it.

Are undertakings of this nature to emanate from public bodies, such as County Councils, or are they rather to be the work of private individuals? The major says emphatically private persons; but men who can and will undertake such work are few and far between. Money is wanted, faith wanted, and a business mind; indeed, we might venture to say it is a nice life-work for a hardworking man, and only a man who is a lover of his kind, and one who truly grieves to see the depletion of the rural districts, is fit to take up the office.

The schoolmaster at Winterslow is alive to his responsibilities, for Mr. Haggard found him giving lessons on the effect of deep and shallow cultivation on root action, and of those of good and bad tilth upon the growth of plants. Just the very things a country boy ought to learn, and which once learnt will never be forgotten. We do not know when we have enjoyed anything more than we have these first three papers (the beginning of a long series, we hope) on "The State Outlook of the English Country Side."

Work on the Home Farm.

Farmers who are not contented with the weather we are now enjoying must indeed be hopeless grumblers. There are some even now who are prophecying evil things in the way of belated May frosts, but sufficient unto the day is the evil thereof, and this glorious sunbime and balmy night air are indeed making all things gay. Barley, which had been got in with difficulty and doubt, has come up very well and looks beautiful. What a lovely tint of green is that of the young blade with the bright sunbime upon it!

Manifold sowing is the important work now. The land is clean and the tilth good; there is plenty of moisture in the soil, and there should be no doubt about the germination of the seed if it is good. Six pounds per acre is not too much to insure a plant, but we often meet with farmers who only sow 4 lbs., and they say they generally get a good plant; but that word generally rather hints at occasional exceptions to the rule. Is it wisdom to risk such occasional failures for the sake of a saving of 2 lbs. of seed costing about 1s. 6d.?

Roots have lasted well, and by dint of lavish use Swedes are finished, except a few loads which are being cut for the hogs on grass whilst they are being washed and clipped for market. The last breadth of Swede land is being ploughed. It turns up rather rough, but the heavy flat roll following quickly after the ploughing breaks the big clots before they have time to get hard. Harrowing and drilling will follow as quickly as possible, and Barley sowing will be over for the season.

Large numbers of sheep are being put on the market at the present period, and it is to be feared that matters may be overdone; but, so far, prices have not given way much. With a continuance of summer-like weather the grazier should find encouragement to buy more freely than he has done hitherto, and should be able to keep all half-meated animals out of the fat stock markets, where they often help so much to depress values.

Mares are foaling with a fair average of success, but we hear of several foals dying. The foal is a very delicate animal, and easily takes cold. The sudden change of weather may have tempted some owners to turn theirs out too soon.

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1/6 per gross; Metal Tree Fasteners, for permanently fastening wall
trees, 1/10 gross; Wall Nails, same price as ordinary nails; Glazing Staples, 1/6 gross; Plant Pots, also Pans, 3/-
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for spraying insecticide, &c., complete, 2/6; Powder Diffuser, for diffusing powder on plants, filled, 1/-; Flower
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Journal of Horticulture.

THURSDAY, MAY 9, 1901.

Chrysanthemums.



EXHIBITORS of cut blooms of
Chrysanthemums know quite well
the advantage gained by the
inclusion of new, if improved,
varieties. Sentiment, or a fond
love for any particular sort, plays but
a small part in close competition for
a valuable prize at an autumn exhibition.

If a new variety possesses even a small
improvement over a similar kind in colour, the
newer introduction should take the place of the
older.

Meritorious New Varieties.

A powerful incentive to Chrysanthemum
culture generally is given by the rapid introduction
of new varieties, and now that English cultivators
are turning their attention to this phase of the
subject we are not so dependent upon our foreign
neighbours for new sorts as was the case but a
few years since. One point has been gained, and
it is an important one, that of improving the
habit of growth. Many of the best varieties now
grow but 4 feet high; many sorts introduced
fifteen or twenty years ago reached 10 to 12 feet
high, in some instances more. Madame C.
Audiguier, quite one of the finest Japanese
varieties that ever was introduced, often reached
14 feet high before its perfect blossoms were
produced. Contrast this with the present up-to-
date sorts, and it will plainly be seen that the
balance is on the side of those of recent introduc-
tion. No time should be lost in adding varieties
of approved merit for next season's display, and
as all cultivators have not the opportunity of
inspecting for themselves, I herewith describe
those coming under my personal observation. The
Japanese section is, as usual, the most numerous,
the most popular, and the most easily cultivated,
therefore I note them first.

Japanese Varieties.

The Princess is an Australian-raised seedling,
sent out by Mr. Godfrey. The florets are
somewhat narrow, semi-drooping when fully



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expanded; the colour being two shades of white, a creamy white in the centre, which fades into pure white with age; a full, bold flower. Loveliness is another of the same batch, and quite unique in the way in which its florets are grooved or fluted, especially on the reverse side. These are of extra breadth, semi-drooping in character; the colour is quite distinct, primrose yellow on the outer, and golden yellow on the inner surface. Lily Mountford is said to be an English sport from the well-known Mutual Friend, but I fail to see the affinity to this popular variety in its formation of flower or petal; it is also said to be identical with Miss Hilda Chamberlain. In any case it is a deserving sort, and should be in every up-to-date collection. Full-sized blooms measure 8 inches in diameter, 6 inches deep; the florets are semi-drooping, quite graceful in appearance; in colour the base of the petals is a rich rose, paler toward the centre, the whole speckled with white. W. R. Church has broad semi-drooping florets, which curl slightly at the tips, showing the golden reverse, which deepens to pale crimson at the base, the surface colour is crimson; full-sized blooms measure 8 inches in diameter. Matthew Smith grows to full size, the medium wide florets curl at the tip; the colour is yellow shaded and striped with crimson and bronze, quite one of the best. Ernest Betsworth has silver reverse florets, amaranth and plum on the surface; this is a novel, yet desirable variety. Charles Longley is a rich amaranth with purple shaded silver reverse; fully grown blooms measure nearly 8 inches in diameter. James Parker is much like Mutual Friend in build and petal, yet quite distinct; the colour is creamy white, whereas in the latter it is snow white. Lady Osborne is white flushed with purple; in form it belongs to the incurving Japanese section as the florets unfold, but with age they reflex somewhat. Mermaid has full, broad, stiff florets; colour white, lined and flushed with rosy lilac. Ella Hexheimer is an English raised seedling of the incurving type of Japanese, fully 8 inches in diameter. The colour is quite distinct from any other variety; the florets have a buff base lined with purple and tipped with gold; the inside of the florets is heavily flushed with purple; quite one of the best of Mr. Jones' seedlings, and should be in every collection. Dora Hexheimer belongs to the same batch, has semi-incurving florets of a claret purple colour, Mabel Morgan was sent over from Australia, and has narrow florets, particularly well built up in the centre, canary yellow in colour. Mrs. J. Greenfield is certainly an improvement on Phœbus, the shade of yellow being decidedly richer. Mrs. Lewis Bell is a seedling from that popular variety Vivand Morel, therefore like it in its build; plum purple in colour. Miss Jessie Cottee is a golden bronze sport from that well-known variety Etoile de Lyon, is equally good for exhibition and for giving late blooms for decoration; it is a really deserving sort to grow. Guy Hamilton is an improved Madame Gustave Henri, as the colour is pure white, while in the latter it is not. Phyllis (Brunnings) is a resuscitation of the old Comte de Germiny in formation; the florets are broad and regularly incurved, the colour is gold lined with terra cotta and crimson. Henry Stowe has broad curling florets, pearly white, suffused and lined with pale rosy violet; a full massive bloom when fully developed. It is one of Mr. Weeks' seedlings. Mr. S. Frizett is exceptionally rich in colour, rosy purple with a silver reverse, and has numerous florets, of a true reflexing character. Mrs. Emma Fox is a deep bloom, rich chestnut red, with a bright golden reverse. Earl of Arran, soft canary yellow with paler reverse; the florets are long and droop gracefully. Mrs. J. C. Neville, white, slightly suffused rosy mauve; the florets are broad and slightly hirsute at the tip. Calvat 1899 produces perhaps the most massive blooms of any variety, measuring fully 8 inches wide and fully as deep, the broad petals loosely incurve, white flushed with pink, deepening in the later developing blossoms; no exhibitor in the coming season should be without this sterling novelty. Mrs. J. Bryant is a distinct cerise flushed with amaranth; the narrow florets droop gracefully. Mr. A. Barrett is quite the best of the Mrs. C. Harman Payne type, the colour is distinct and novel, dark rose shaded chamois. Lord Salisbury has recurving florets of medium width, making a full sized bloom; the colour is dull crimson, slightly suffused with yellow.

Sir Herbert Kitchener (Owen's variety) is quite one of the best of recent introductions; the florets are flat, recurving regularly, and building up a full sized handsome flower; in colour it is bright golden chestnut, or rich terra cotta, with amber reverse. Khaki is peculiar in its construction, the even sized florets incurve regularly, yet not too tightly to lose their grace; the colour on the reverse is golden amber, dull red on the surface.

The Wonderful, is an approved form of the incurving Japanese section; the florets are massive in their build; the colour is a rich golden mahogany bronze, with a dull red inside. Souvenir de l'Exposition de Paris possesses much refinement of petal, which are somewhat narrow and drooping; the colour, pale pink, deepens toward the centre, edges white. Britannia, the florets are semi-drooping, curl at the tip, colour Indian red with golden reverse. Sensation has yellow striped florets, flushed with crimson and bronze, with golden yellow reverse; the florets incurve at first, gradually reflexing as they expand, finishing with a little curl at the tip. General Buller is a true incurving Japanese, broad florets, bronze amber. Souvenir de Marchioness of Salisbury is a sport from the popular M. Chenon de Léché; the colour is striking, the outer florets pale yellow, deepening in the centre to a rich tint. Miss Alice Byron, although not positively new since last year, promises to be one of the best white-flowered varieties; fully developed blooms measure 8 inches wide and 6 inches deep, with a full rounded centre of regularly incurving broad florets; the habit of growth, too, is all that could be desired. Lord Ludlow has improved so much since it was introduced from Australia that it is quite one of the finest of the bronze yellow type; many late blooms are banded or edged with crimson, thus enhancing its value. J. R. Upton, too, deserves a notice; grandly developed blooms are produced by plants growing not more than a yard in height; and has rich golden yellow blooms.

Incurved Varieties.

Frank Hammond is without doubt the finest variety sent out this spring. It is an English raised seedling from the best of parents. The blooms are fully built, being quite 5 inches deep and 6 inches in diameter; the florets incurve regularly, as they ought in a perfect bloom of this section; rosy bronze with a golden shading. Edith Hughes is a sport from Miss Violet Foster, is of full size, has good florets; the colour is pleasing, a white ground heavily striped and splashed with rose. Mrs. Gerald Williams is what is known as a "back row" flower, as good specimens of it measure fully 6 inches in diameter; the florets incurve regularly, and are a rich golden yellow. Ralph Hatton has fully come up to last season's promise; purple lilac in colour. Mr. W. Harvey has pearly white, pointed petals, of excellent form. Nellie Southam resembles Miss Dorothy Foster in form, is deep lilac in its colouring. Louisa Giles is also an English raised seedling, the result of a cross between Oceana and C. H. Curtis; the florets are blunt at the point, irregularly incurving; the colour is orange yellow; quite a desirable variety. Thomas Lockie is creamy white. Madame Vernieul reminds one much of Princess of Wales in the formation of its florets and general character; the colour, though, is deeper in tint of rose. Dome d'Or, cinnamon, flushed yellow, narrow florets. The Colonel is dwarf in its growth, although it produces blooms fully 5 inches in diameter; the colour golden chestnut with crimson tips, the inner surface crimson claret. Edinburgh is an Australian seedling, and promises, like the bulk of Mr. Pockett's introductions, to be a desirable variety; colour, silver flushed purple. May Bell is an extra large flowering variety; silvery pink colour. Mrs. W. Howe in petal much resemble C. H. Curtis; the colour is bronze yellow at the base, with a rich yellow centre. Yvonne Desblanc, creamy white, is a variety of desirable form.—E. MOLYNEUX.

Montbretias.—Montbretias somewhat resemble Gladioli, and now is the time to get them in, a light rich soil on a west or south-west border, well drained, suiting them. Cold, heavy soils are not at all suited to them, and, before planting, leaf soil or road scrapings should be added if needed. Montbretias are pretty for grouping in beds and borders, and the flowers when cut are useful for vases.

*Cœlogyne cristata.*

THE illustration of well-flowered plants of this useful Orchid was prepared from a photograph sent by Mr. E. D. Wrighton, head gardener to Sir R. H. Wyatt of Garthyngared, Dolgelly, Merionethshire. Mr. Wrighton comments on the plants, and says:—"I have much pleasure in sending for your inspection a photograph of five plants of *Cœlogyne cristata*, grown and flowered last month by me in a house containing a mixed collection of Orchids, in the above gardens. There are nearly 200 spikes of bloom, each spike averaging five flowers, making a total of nearly 1000 flowers. Some of the pseudo-bulbs are nearly 5 inches in length, and the foliage a very dark green. They are potted in bog peat dug on the estate, and watered liberally with weak manure water when growing." The bog peat seems to suit them well, as does Mr. Wrighton's treatment generally. Leaf mould from Belgium has lately been much used as a potting compost. The fibrous roots of Beech trees take the place of good peat in this case, and the leaf mould is from leaves of the same species of tree.

Helcia sanguinolenta.

I AM indebted to a correspondent for a flower of this pretty species, which is not much grown; it has indeed become quite rare, though it has been known to cultivators for fifty years at least, and has been imported on several occasions. *H. sanguinolenta* is nearly related to the *Trichopilias*, but in the majority of this favourite genus the column is enclosed in the enfolding lobes of the lip, while in the species noted it stands free and nearly erect. The habit is dwarf and evergreen, consequently the plants do not need drying at the roots. A native of Ecuador at considerable elevation, the cool house with abundant atmospheric moisture and shade in summer suits it best.—H. R. R.

Kew Orchids.

THE following Orchids were in flower in the houses at Kew on May 2nd:—*Cypripediums* *Exul*, *Williamsi*, *Lawrenceanum*, *barbatum*, *Rothschildianum*, *nigrum*, *virens*, *Deedmanianum*; *Selenipedium grande* and *S. Roezli*. In the *Odontoglossum* house were *O. crispum*, *triumphans*, *Halli*, *H. leucoglossum*, *sceptrum*, *citrosum*, *Rossi majus*, and *Pescatorei*. Amongst *Dendrobiums* there were *thyrsiflorum*, *Pierardi*, together with *Cœlogyne tomentosa*, *Lælias Schilleriana*, *Latona*, and *cinnabarina*; *Cattleya labiata Mossiae*, *C. l. Mendelli*, *C. l. Schröderæ*, *C. citrina*, and *Lawrenceana*. The *Masdevallias* were gay, including *igneæ*, *coccinea Thompsoni*, *c. Lindeni*, *c. cœrulescens*, *lilicina*, *Pourbaixi*, *Peristeria*. The rather uncommon *Satyrion carneum* and *coriifolium* were handsome and attractive, also *Bletia Shepherdii*, *Pleurothallis longissima*, *Epidendrum ciliare*, *radicans*, and *subpurum*. *Vanda suavis* was flowering strongly, and *Ansellia humilis*, *Diacrum bicornutum*, *Oncidium sarcodes*, *altissimum*, and *concolor* were likewise showy. *Cirrhopetalum robustum*, *Cyrtopodium Andersoni*, *palmifrons*, *Myacium leucorhiza*, *Maxillaria* var., completed a list of the more conspicuous species worthy of note. The list is sufficient proof that the Orchid houses are bright and showy. That they are appreciated is evident from the repeated views which many of the visitors make; they tour the circle of the houses until the sight is satiated.

Common Mistakes in Fruit Culture.*

BIOGRAPHY teaches us that ultimate success is often the offspring of repeated failures, carefully looked into, and strenuously wrestled with; and it is allowed that we often learn more from our downright failures than when all goes smoothly, and I therefore trust these few negative remarks may be of service to some of the Fellows of this society. One of the most widespread errors in fruit culture is that of planting too deeply in the first instance, and thus the useful and fruit-supporting roots are situated beyond the influence of sun and air, and naturally perish, the result being manifested in the trees making strong unripened growth, leading to canker and unfertile spurs, with inferior fruit, specked and cracked by fungoid growths. As a general rule, all Apples on the Paradise stock, and Pears on the Quince stock, should be planted in such a manner that the junction of scion and stock shall be 1 inch beneath the level of the soil. One of our best gardeners tells me that some trees he had did not progress, and he found they were planted wrongly, but on earthing them up with rich old potting soil they at once recovered. The new soil in this case probably induced the formation of new surface roots, which would account for the recovery of the trees.

Depth of Planting.

Trees upon free stocks (Crab, Pear, and Plum) should be planted with their roots as close to the surface as possible, so that the upper fibres are just covered by the soil, and in no case deeper than they have been growing in the nursery. The earth mark will be a safe guide for planting. It will sometimes happen in newly-formed gardens that fresh soil, manure, &c., are added to the borders after the trees are planted. This is fatal to success; and where this is noticed the trees should be lifted,

root-pruned, and replanted. We frequently see wall trees buried almost up to the branches. Newly-planted wall trees should not be nailed to the walls until April, as, if the ground where they are planted sinks, they become "hung-up," and the newly formed root fibres are destroyed. Where Vine borders are often heavily top-dressed, the roots become buried too deeply to get the benefit of needful sun, warmth, and air. In this case the surface should be removed until healthy roots are discovered, when they should be carefully fed with a thin layer of fresh loamy soil. For, as is well known, "shank" and mildew are produced by want of root power, as well as by half-ripened wood. In orchards, trees are far too often planted by inexperienced hands, and a large hole may be dug, which acts as a water trap in winter; and in heavy land the soil cracks in summer, and the trees have a hard struggle to live. They should be planted, at first, rather above the general level, as they are sure to sink a little; and the surface soil should be kept open by hoeing, which will keep it from cracking, nor will undue evaporations take place. In my experience I can relate three very bad examples of this common cause of failure. The first was a landowner, who, to save a few shillings, elected to plant the trees with his farm men. Two years afterwards I was called in to advise, and found they had been planted 12 to 18 inches too deeply. The whole 8 acres had to be lifted again; and, to show the loss of time that had taken place, I may say that whilst many had died, the residue had grown but 1 foot through the heads, when in another orchard, planted at the same time by my own people, the trees were 4 feet, and some of them

* A paper read before the Royal Horticultural Society, on Nov. 20th 1900, by Mr. GEO. BUNYARD, V.M.H.



CÆLOGYNE CRISTATA AT GARTHYNGHARED.

more, through the heads. The next was a case where the workman, to make a pretty-looking job, had planted some of the trees 3 feet too deep in order to bring all their heads level!

The third case was a most flagrant one. A market grower purchased of me some hundred Peach trees, and in the May following he wrote to me, saying that nearly all of them had died. Now these trees, being on freely rooting Plum stocks, very rarely fail; so I at once went to see them, and on walking through the houses I noticed here and there one had done well, and my friend said: "You know, there must have been something wrong with them, or else why should a few live, and all the rest die?" I replied: "The reason is this: the living trees have been properly planted; the others have been put in so deeply that the buds, which are generally 12 to 15 inches above the ground level, are below the surface." After examining them, and digging down, in some cases 18 inches before coming to the roots, he said: "You have convinced me. I see my own men have done all the mischief. I must start again with a fresh lot." In many gardens vegetable crops, which are highly manured, are planted close to the walls, and the borders must be therefore frequently dug. Now all fruit trees delight in a firm root-hold, and when it is otherwise they are tempted to keep on growing late into November by the strongly manured soil which they find, and consequently rank growth abounds, and Nature's work of ripening the wood is retarded till too late, when early frosts are fatal to the sappy wood. For a remedy, leave a hard 3-foot path next the walls; do not dig this, but just hoe the surface to prevent undue evaporation, and mulch and water freely when a crop is set.

Watering Wall Trees.

The fact that brick walls absorb from the soil a large proportion of the rain that falls in the winter is often overlooked. The moisture draws up the walls, and is dispersed by sunshine and wind; and over and over again I have been called in to see miserable trees, smothered with red spider, and only just alive, from the want of copious watering in the early growing season. The planter overlooks the fact that frequently, even after heavy rains, the soil next a wall is dry as dust, as it is rarely that rain comes down quite vertically—and storms seldom do so—so that the fruit trees upon some walls get no benefit; and especially is this the case where wide copings are used.

Inside-planted Vines often suffer from drought at the roots; and Peaches and Nectarines frequently give up from want of moisture. In these cases a soil-tester, or the removal of the surface soil, will indicate the cause of failure. Another source of trouble is from an exactly opposite cause. In wall trees it will sometimes occur that a border is lower on one side of the wall than on the other, and the consequent soakage keeps the roots of the trees in the lower position always in a damp condition, and renders lifting necessary. An ill-drained inside Vine or Peach border is also to be avoided. I have seen failures—bud-dropping and yellow foliage—from the practice of growing Chrysanthemums in Peach houses. The frequent waterings, and the strong stimulants given to the flowers, are very hurtful to the fibrous and tender surface roots of the fruit trees, which should be safeguarded. The same system of placing pot plants on Vine borders is also to be avoided where possible.

Pruning.

In olden times it was the custom to take all fruit trees away from the walls, after pruning them in winter, gathering them carefully on to large poles, placed in convenient positions, dressing the walls thoroughly with some insecticide, and then painting the trees entirely over with a like solution—generally a mixture of sulphur, lime, soot, softsoap, or any strong insecticide. They were then replaced with care, and naturally, where such attention was given, there was an absence of aphides and other like troubles. I remember once seeing an Elruge Nectarine (outside) so treated that carried seventy dozen fine fruits. I fear now the general routine of the garden, tennis lawn, &c., forbids this work being carried out regularly.

A long chapter could be written on pruning mistakes alone, but for our purpose it will suffice if we lay down a general rule, that espalier Apples, Pears, and Plums on walls, cordons, &c., should not be pruned back before the first week in August. An earlier cutting only induces a second growth, and keeps the sap in action when it should be resting; and trees "stopped" early in August have ample time to plump their buds before winter. Doubtless earlier pruning is carried out in many cases for the sake of neatness. Over-pruned trees can be made fertile by thinning the boughs and allowing them to extend for two years. In the case of Peaches and Nectarines another rule is necessary. As soon as the shoots have made six or eight leaves the trees should be gone over, and thumb and finger stopping be given to the foreright shoots, and at the same time the "wild wood" (the extra strong shoots which often form in the central part of the trees) should be cut out entirely, or the balance of the trees will be destroyed. This hand work is far better than that of the knife. Any further pruning necessary should be done in February or March.

(To be concluded.)

Greenhouse Hardwooded Plants.

(Continued from page 364.)

Rhododendrons (including Azaleas).

THE above furnishes another large genus of the natural order Ericaceæ, and now, according to botanists, all the Azaleas are classed as Rhododendrons, but when dealing with them it may be well to avoid confusion by using the old garden name Azalea. The first Himalayan Rhododendron was introduced in 1818, when Dr. Wallich sent home seeds of *R. arboreum*. In 1847-51, Sir Joseph Hooker, during his travels in the Sikkim Himalaya, sent home seeds of a great many new species, the greater part of them finding a home outdoors at Fremough, in Cornwall, but further north they have to be grown inside. Their cultivation is very easy, and they are best suited, if space can be afforded, to plant them in borders in a perfectly cool house, as they are very impatient of the least fire heat. Some of the best species are *R. Aucklandi*, *Dalhousianum*, *Edgworthi*, *Gihsoni*, and *ciliatum*, the last being the parent of some of our best hybrids, such as *fragrantissimum*, *Sesterianum*, and *præcox*.

The many beautiful varieties raised from the *jasminiflorum* and *javanicum* types are well worth a place in the intermediate house. These Javanese Rhododendrons, however, were splendidly described by Mr. Sillitoe in recent issues of the Journal. They soon become leggy, and this, as your correspondent pointed out, can, to a certain extent, be overcome by keeping them well tied down, which, in many cases, causes them to push growths from the older wood.

Azalea indica, or the Indian Azalea, as it is commonly called, from which we have so many fine varieties in our gardens at the present day, are, as a rule, purchased from nurserymen, and these plants are worked on a strong growing form. A great many of them, however, can be very well grown on their own roots, and especially does this apply to *A. indica obtusum*, *A. i. album*, and *A. i. splendens*, the latter a variety with very bright flowers. Very good results are also obtained with *A. i. calyciflorum* and *ledifolium* on their own roots. All the above have small flowers; they force very readily, and may easily be had in flower before Christmas, knowing which, it is surprising that they are not more generally grown. If one wishes to grow their own plants, the cuttings should be selected from the young growths after they have become sufficiently firm to withstand the risk of damping. These can be readily obtained toward the middle or end of March. In a collection their forms should be as varied as possible, some being trained as pyramids, others in bush form. After having flowered in the greenhouse, they should be removed to a warmer temperature, and encouraged to make all possible growth, keeping the syringe busy among them, as they are very apt to be attacked by thrips and red spider. The former can easily be destroyed by fumigation. The wood ought to be thoroughly ripened, and during September they will require to be moved into their cool winter quarters, from which they can be removed to a warmer house, as required for forcing purposes. There are so many good varieties now that it is needless for me to give a list of them.

Acacias.

Acacias are amongst the most useful and beautiful of our spring flowering greenhouse plants, and most of them have the united charm of beautiful flowers and graceful habit and foliage. They are almost all, without exception, natives of Australia, where they are popularly known as "Wattles," *Acacia dealbata* being the well known Silver Wattle, and which is largely sold in our markets. It is a plant that should find a place in every conservatory, for its silvery grey foliage and pale yellow flowers furnish a lovely sight when in flower. It succeeds well either on a wall or pillar.

Acacias may be easily grown from seeds or cuttings, and do well in a mixture of peat and sand with the addition of a little good loam. After flowering they should be cut hard back, placed in a close house, and syringed frequently to encourage good growth. When this has been completed remove outside and place on a bed of ashes, taking them inside about the end of September. The best varieties for pot culture—as they flower freely in a small state—are *A. armata*, which is possibly the most commonly grown of all. It is a very useful sort, easily grown, and flowers freely. My only objection is to its rather stiff habit. It is also prone to the attacks of a small white scale, and also mealy bug. There is now a variety of it named *A. angustifolia*, which is of a much freer habit of growth, and flowers with equal freedom. *A. Drummondii* is also one of the very best, being compact in habit, and producing its pale straw-coloured flowers in great profusion. *A. pulchella* is also very good, and is a splendid subject for growing into large specimens. *A. hastulata* is of a distinct habit, producing its almost white flowers in great abundance. It is perhaps more generally known under the name of *A. cordata*, but this is not correct, as it was introduced under the name of *A. hastulata* as far back as 1828. For clothing pillars I think there is nothing to beat *A. Riceana* and *A. verticillata*.—J. COURTS.

Michaelmas Daisies.

THE claims of Michaelmas Daisies to priority as garden plants for early and late flowering, or for cut blooms, is undeniably supreme; they in the severest winters stand uninjured. Their lovely flowers are quite a boon in the herbaceous and shrubby borders from July, and continue in unbroken succession until early December. A position most suitable for them is in the spaces between flowering shrubs or low-growing trees, where they are quite at home, and may be left undisturbed for a few years. Too much cannot be said in favour of so beautiful and useful a genus of Composites, and we are indebted to North America for most of them. When *Phlox decussata*, Japanese Anemones (*A. japonica*), the perennial Sunflowers, and the beautiful Chrysanthemums and Dahlias are past, the Asters are spreading their bright-hued sprays to enliven the gardens, which would otherwise be dull and uninteresting. Such flowering plants, that take us into the cold dull days of November, and even December, cannot be too highly praised or encouraged as worthy subjects for beds or borders. Their gradation of height also renders them suitable for any kind or style of gardening, either as whole beds, in shrubberies, or in front borders, as almost any height may be had, from a few inches to 6 and 8 feet. They are not capricious as to when they are moved, and, if the operation is done with a little care, they may be transplanted at the present time, and afterwards well watered.

Pot Culture.—To produce fine sprays and large flowers when grown as pot plants, the best soil for them is equal parts loam and leaf mould, with a dash of sand, though good ordinary garden soil will suit them. Some of the most showy species and varieties are as follows, with approximate height:—

Early Flowering.—*Acris*, 2 feet; *amellus bessarabicus*, 2 feet; *a. Riverslea*, 2 feet; *a. Framfieldi*, 2 feet; *corymbosus Perseus*, 2 feet; *linosyris* (*chrysocoma*) 2 feet; *longifolius* var. *Madame Soynouse*, 2 feet; *Novi-Belgii Madonna*, 3 feet; *N.-B. lævigatus*, 2½ feet; *ptarmicoides major*, 1½ feet; and *punicus*, 2½ feet.

Medium Flowering.—*Cordifolius albus*, 4 feet; *c. Diana* (syn. *Photograph*), 3½ feet; *c. elegans*, 4 feet; *Coombe Fishacre*, 3 feet; *Councillor W. Waters*, 3 feet; *Lindleyanus nanus*, 1½ feet; *Novi-Belgii Pleiad*, 1½ feet; *N.-B. Autumn Glory*, 4 feet; *N.-B. Mrs. C. W. Earle*, 5 feet; *N.-B. F. W. Burbidge*, 4 feet; *N.-B. Top Sawyer*, 4 feet; *N.-B. White Spray*, 5 feet.

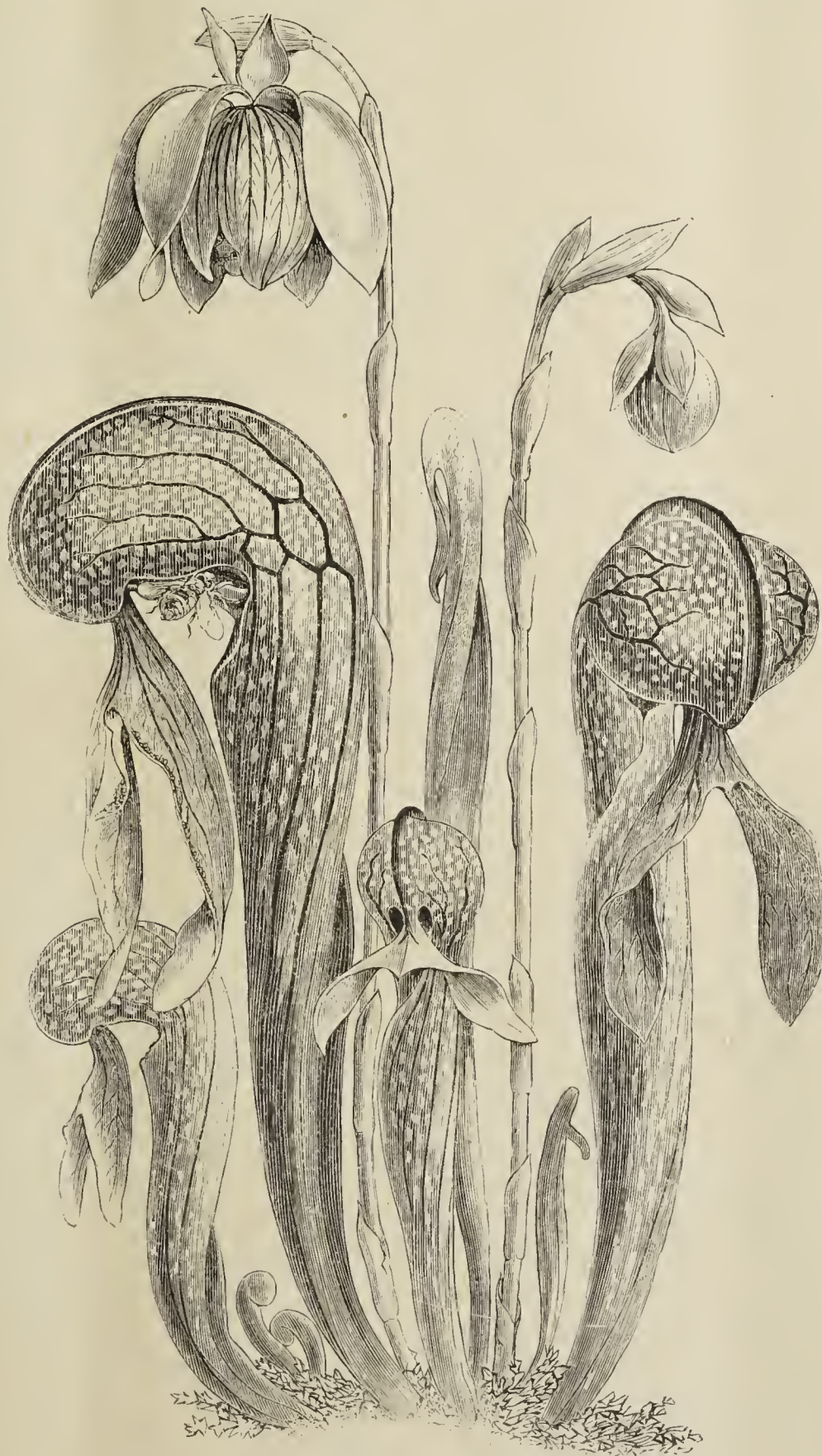
Late Flowering.—*Amethystinus*, 4 feet; *diffusus horizontalis*, 2½ feet; *ericoides*, 2½ feet; *lævis Arcturis*, 4 feet; *lævis Calliope*, 4½ feet; *grandiflorus*, 2½ feet; *Novæ-Angliæ Mrs. J. F. Rayner*, 4½ feet; *N.-A. Précocité*, 4 feet; *N.-A. Wm. Bowman*, 4 feet; *N.-B. E. G. Lowe*, 3½ feet; *N.-B. Archer Hind*, 4 feet; *N.-B. Maia*, 4 feet; *Tradescantia*, 4 feet; *turbinellus*, 3 feet.—W. L., *Lewisham*.

Darlingtonia californica.

SLIGHT confusion was caused by De Candolle applying the name of *Darlingtonia* to some members of the *Acacias*, which he separated from them and formed a new genus. This has been abolished, and the species so separated added to *Desmanthus*. However, it was resolved that Dr. Darlington, an American botanist, should not be robbed of the

honour due to him, so *Darlingtonia* was bestowed on a new genus of the natural order *Sarraceniacæ*, or Pitcher Plants. Only one species is known at present, and popularly known as the Californian Side-saddle, or Pitcher Plant. It has been thus described by Mr. Black. It is "a perennial herb growing in marshy places. Its leaves all rise from the root, the adult ones being from 8 inches to a foot or more in length; the stalk or pitcher tubular, gradually tapering downwards, and singularly twisted on the axis about half a turn, marked with strong veins and slender veinlets, and the summit vaulted and formed into a sac about the size of a hen's egg, on the under side of which is an oval orifice, about half an inch in diameter, opening into the cavity of the pitcher; the upper part of this tube is of a dull orange colour. The blade, which is borne on the end of the stalk or pitcher, is narrowed at the base, and deeply divided into two spreading nearly lance-shaped lobes, which are curved downwards, and also often backwards, resembling the lop-ears of some varieties of rabbit. The pitcher, inside the hood, is furnished with short conical hairs, which point downwards, and towards the base there are long slender hairs, also pointing downwards; remains of insects are sometimes found at the bottom.

"The flowers are single and nodding at the apex of a smooth stalk, which is furnished with straw coloured scales, and varies from 2 to 4 feet in length. When fully expanded the flower is about 2 inches in diameter; the calyx consists of five straw-coloured acute sepals; the petals, of a like number, and pale purple in colour, are narrowed and concave at the apex and broad



DARLINGTONIA CALIFORNICA.

below; the twelve to fifteen stamens are nearly hidden by the projecting summit of the ovary, which is top-shaped, slightly five-angled, and crowned by a short style with a five-lobed stigma. The fruit is a five-celled capsule, about an inch in length, with numerous seeds. The forked blade of the leaf and the form of the stigma distinguish the genus from *Sarracenia*, which has an umbrella-shaped stigma." In our illustration a bee may be seen making its way to death's-door.

The plant is a herbaceous perennial, and requires similar treatment to *Sarracenia*s, namely, to be grown in fibry peat and chopped sphagnum, and protected from frost in winter in a pit or frame. Numbers of *Sarracenia*s and other insectivorous plants are now flowering at Kew. They are both beautiful and exceedingly interesting.

Injurious Insects.*

THIS is the twenty-fourth annual report prepared and published by Miss Ormerod, and she announces that it will be the last. Byron expressed a common feeling amongst men when he said there was something touched us in the finish of what is unpleasant; this word, however, could hardly be applied to such reports as Miss Ormerod has issued. They may not be cheering, since they tell of the injuries caused by insects, but they have always suggested valuable remedies or means of prevention. The work that these reports have entailed has been very great during most of the time. Miss Ormerod received much aid from a sister now deceased. It has been put upon entomologists as a reproach that the majority of them did little by their studies to benefit the gardener or farmer. All give honourable mention, however, to Curtis, Douglas, Newman, and Westwood in the past, and we might single out for commendation several entomologists of our own time, but Miss Ormerod's labours through nearly a quarter of a century have been unique, at least in Britain. We may say that the insect pests of the farm, the orchard, and the kitchen garden have now been fairly investigated, though, of course, new foes occasionally occur. But there is a very promising field open to an aspiring entomologist—that is, to give us a comprehensive account of the insects that haunt the flower garden, frames, and greenhouses.

Considering the aphid group of insects to be, on the whole, our worst garden pest, from the variety and persistency of their attacks, we look first to see what the report has to say about them. Evidently the year 1900 was not specially remarkable as an aphid season. There were some complaints about the American blight or woolly aphid, but nothing particular. A German scientist has recently pointed out that this objectionable fly may be of service—first, in supplying food to many birds and insects which would otherwise attack vegetation; secondly, in drawing winged insects to flowers that are partly fertilised by their agency. Nearly related to aphid is the Apple-sucker or Chermes (*Psylla Mali*), a minute insect, which has given a lot of trouble by sapping the strength of the blossoms during April. The mature insects are about in autumn, when the eggs are deposited upon various parts of the Apple tree. While young it ejects tiny globules with threads, which are more discernible than the chermes itself. The Toddington Orchard Company, near Winchcombe, has proved that the most effective remedy was softsoap wash, forcibly driven into the trusses of blossom.

One of the enemies of the Apple which came prominently under the notice of Miss Ormerod was the caterpillar of the Pith-moth, *Laverna atra*, which had been somewhat complained of in 1889 and 1898, but the visitation of 1900 was far worse, and extended over a wide area—Worcester, Ross, and Polegate, Sussex. At the last place 2 bushels of infected twigs were cut from 130 trees. We detect the presence of this caterpillar by the drooping or dying of the blossom and leaf buds, consequent upon its boring in the centre of the shoots. On completing its growth the insect turns to a chrysalis near the end of its burrow. It is needful to distinguish the attacks of the pith moth from those of the eye-spotted Bud-moth (*Tinetocera ocellana*). That species may occasionally enter the shoots, but usually it works amongst the buds and new leaves, tying them together. At present we have not ascertained where the eggs are laid and the young caterpillars feed, but it is suspected they hibernate under the bark of a twig close to a bud, and begin to tunnel in April. Whether when more is known about the habits of the moth, which emerges during July, some means might be found to destroy them before they have laid their eggs, remains to be seen. The only measure that is now taken is to break off the infested shoots in May, and burn them.

Currant bushes were rather troubled in 1900 with those small but pertinacious pests, which have been much observed the last few years. One of the valuable experiments tried by Miss Ormerod and friends upon *Phytoptus ribes*, the Currant gall mite, indicated by results that the insects, whose galls are so conspicuous on the upper portions of the shrubs, evidently also find lodgment low down on the stem, and even on the roots. Often it happens that Black Currants, which are the abode of this mite, flower profusely, yet no fruit is formed. Two of the cures recommended by the Board of Agriculture have proved valueless—viz., petroleum emulsion, one to twenty of water, also a 2 per cent. solution of carbolic acid. Other vaunted remedies have failed. A recent and expensive one is the vapour of hydrocyanic acid, scarcely applicable to a plantation. The Red Currant, too, has been having its turn; several complaints were made last year about the white woolly scale (*Pulvinaria ribesiae*), supposed to have arrived here from France in 1889, but not observed to any amount till lately. The first signs are in May; about July,

if unmolested, the shoots become covered with masses of wool dotted with brown scale. It occurs sometimes on the other Currants.

Attention is drawn to the Pear Cluster mite. Of the remedies tried, kerosene emulsion is the best, the trees being sprayed after the leaves have fallen and before the buds are swelling. Of course, a mixture containing softsoap and paraffin is of benefit. Also the Pear gnat midge was noticed about many districts in 1900. This report contains some valuable remarks on "pocket" or "bladder" Plums, at one time thought to be the work of insects. Very likely insects may afterwards be present, but it is a fungoid infestation, the species being *Exoascus Pruni*. Food supplies in excess are furnished to the pulp, and withheld from the stone. Of course all such Plums should be burnt, but it is necessary to look after the old wood, as the mycelium can live on the branches.

The Gooseberry sawfly is a pest which, when it occurs in a locality, is apt to be more troublesome than the commoner caterpillar of the magpie moth. Some schoolboys at Bunbury, Cheshire, were set to work in July, and they cleared about 15,000 by hand-picking. In districts of Lincolnshire, the familiar caterpillar of the silver Y-moth did some damage to Potato leafage, an unusual circumstance. Our well-known foe, the Cabbage moth, made a new departure in Aberdeenshire, by stripping rows of Peas, devouring both the leaves and the young pods. This report gives a short account of the flatworm, or "land planarian," *Bipalium kewense*, a curious worm with a variable head, which has been imported in plants or soil. It is not injurious, being carnivorous, and preying chiefly on earthworms.

Manuring of Fruit Trees.

WE have seen that while nitrogen produces rankness of growth, phosphorus produces fruitfulness and earlier ripening. Potash does what there is left to do—namely, improves the quality of the fruit, both in colour and in flavour. It is especially necessary for sugar-producing crops, of which fruit is one of the most important. Analyses have shown that Grapes and Beet grown on soil rich in potash have a larger proportion of sugar than those on soil which is poor in potash.

III.—Potash Manuring.

Well cultivated garden ground rarely lacks potash. Farmyard and stable manure, as we saw in treating of nitrogenous manures, contains twice as much potash as phosphate; and as potash suffers practically no loss from drainage, a good black garden soil has generally a rich store locked up in the humus of the soil, and it only needs unlocking, which is brought about by the addition of lime or basic slag. Where, however, trees have been growing some years, and the soil has lost a good deal of its original store of humus, as we saw in the first of this series of articles, and with it the potash, the application of potash becomes a necessity if fruit of the highest quality and flavour is wanted. There are two things to be remembered in applying potash. One is, if the soil is deficient in lime, the latter ought to be applied before the potash; the other is, that the potash should be applied in the autumn or early winter, when the roots are at rest and the impurities of the potash can be washed out by the winter rains. The most usual form in which potash is applied is in the form of a kainit, which contains about 12 per cent. of potash and 11 per cent. of magnesia, besides common salt and sulphuric acid. This is very cheap, and probably the most economical of any potash manure to use. It should be applied in the autumn or early winter, at the rate of 3 to 4 lbs. per 40 square yards, equivalent to 3 to 4 cwt. per acre.

Some crops, like Raspberries, will stand more than this. It should not be used at all for Strawberries, as they do not like kainit, though they benefit by an application of sulphate of potash. This latter is much richer in potash than kainit, the 90 per cent. grade being about four times as rich in potash as kainit. If it is desired to apply potash in the spring, this is probably the best form in which to apply it at that season. Muriate of potash, or the common salt of potash, contains 49 per cent. of potash, but is a very dangerous manure to use on some soils. It sometimes produces splendid results, better than sulphate of potash, but, on the other hand, if it comes in contact with the tender rootlets of plants it kills them, especially in the spring. If it is used it ought to be tried at first only experimentally in small quantities, and with great care.

The most valuable potash manure of all is phosphate of potash, but it is too dear to apply to the soil. Another source of potash is wood ashes. All the refuse of the garden which cannot be buried or kept in a heap to decompose, should be burned. The ashes in their dry state contain about half as much potash as kainit, but if allowed to get wet their value is greatly lessened. Poultry and pigeon manures are also valuable for fruit trees for the potash they contain, the former containing about 12 lbs. of potash to the ton, and the latter about 25 lbs. If well rotted manure of this description is

* Report of Injurious Insects and Common Farm Pests during the year 1900; with Methods of Prevention and Remedy. By ELEANOR A. ORMEROD, LL.D., V.M.H., &c. London: Simpkin, Marshall, Hamilton, Kent and Co., Ltd., 1901.

applied alternate years, the trees will probably get a sufficiency of potash, if, on a soil lacking in lime, basic slag or lime is applied the intermediate years.

Liquid Manuring.

Few realise what a tree consumes in maturing a heavy crop. When the tree has blossomed, made its summer growth, and developed its fruit to a moderate size, the available plant food within reach of its roots is generally getting scarce, and the consequence is that the tree has to be on short rations the rest of the season, resulting often in one of two evils—stunted fruit, or such an exhaustion of the tree that it can bear nothing the following year. This is especially the case if August and September are very dry. The plant food in the surface soil is probably too dry to be of any use—as vegetation can only use food in a liquid state—whilst the lower soil, from which the tree has to get all its moisture, is only poorly supplied with the necessary plant food. If it is a stone fruit tree, it possibly will not be able to accomplish its stoning properly, and many fruits will fall off in consequence. It is in such circumstances as these that liquid manure is of the greatest possible assistance to a tree. But though it is in the dry weather of July, August, and September that the tree especially needs feeding, liquid manure is of great assistance to it at all times—when it is setting its fruit, when it is maturing its summer growth, when the fruit is stoning or “pipping,” when the fruit is swelling and acquiring its flavour, and last, but not least, in the autumn, when the tree is forming its fruit buds for the following season, and storing up material in its tissues for the developing of the spring blossom.

Having seen, then, the importance of liquid manuring, let us consider the best material to use. First, there are the various animal liquid manures—the drainings of the farmyard or stable, and the slops of all sorts of the household. These are, of course, almost entirely nitrogenous. Very valuable animal liquid manure can be made by mixing well-decayed manure, especially that of poultry and pigeons, in a tub of water, which can then be used at so much to the pail of water, according to the strength of the liquid, great care being taken not to make it too strong. Another nitrogenous liquid manure can be made from nitrate of soda, which is very soluble. That from high-class guanos is also principally nitrogenous, unless they are dissolved guanos—that is, guanos in which the phosphates have been made soluble, as in dissolved bones, by the action of sulphuric acid. The phosphates, of course, in these guanos, as well as in dissolved bones, are acid, and, like superphosphate, must be applied in a weak solution to soils where there is not a sufficiency of lime. There is one very valuable guano now on the market, which at any rate for this purpose is all that can be desired, and that is Damaraland guano. Almost the whole of the nitrogenous elements are soluble in pure water, whilst of the phosphates, which are often quite insoluble in natural guanos, nearly one half are soluble in water, and nearly another third is soluble in the weak acids of the soil. Moreover, the phosphate, instead of being acid like superphosphate, or insoluble like three-lime phosphate, are, in the form of phosphates of ammonia, potash, and soda, which are very soluble, neutral phosphates, and very valuable. Here, then, is a complete plant food, which, though dear, is undoubtedly the best all-round material for liquid manuring for practical purposes. An extremely valuable plant food, especially for fruit, is phosphate of potash, but the price, £22 per ton, is almost prohibitive for outdoor use, except for the most cherished trees. A weekly or fortnightly watering with this, alternately with nitrate of soda, is productive of magnificent results. It is so strong that about half an ounce to a gallon of water is sufficient. The above remarks apply also to phosphate of ammonia.

Besides the manures above mentioned there are many other proprietary manufactured manures, some of them very good, but most of them dear. They are made, however, in a soluble form for the purpose of liquid manuring, and undoubtedly give good results, but at a greater cost than most of the manures above mentioned. Great judgment and care is necessary in the application of liquid manures, or the trees may be damaged, and even killed. The parts of the tree that suffer first are the fine delicate fibrous roots in the surface soil, and though the tree may not show the damage in its leaves, its bearing powers will be lessened. Special care is necessary in very dry weather, when it is prudent to moisten the earth with plain water first, as the rootlets are very likely to suffer damage when they are very dry by being suddenly brought into contact with a powerful stimulant or a very rich food.

Soft water should always be used for dissolving manures, if possible, as it contains carbonic acid derived from the air, which is of considerable assistance in dissolving the manures, especially the phosphatic elements in them. In a system of liquid manuring it is well to have two or three different sorts of manure in use, so that they can be varied, thus giving the trees a better chance of getting all the elements of plant food that they need. Otherwise they may get too much nitrogen and too little phosphate, or *vice versa*.—A. PETTS.

NOTES



NOTICES

Weather in London.—Thursday, the 2nd of the month, was bright; Friday, ditto; Saturday was equally pleasant, as was Sunday; but Monday was dull, and cold enough to necessitate the office fire being lit. A very slight shower fell in the afternoon, and heavy rain during the evening. Tuesday was dull and comparatively cold, while on Wednesday, besides being cold, it was dull and murky.

Weather in the North.—There has been a continuation of the fine weather during the past week, with prevailing coldish easterly winds, especially in the evening. A smart thunderstorm occurred on the afternoon of the 3rd inst., accompanied by pretty heavy rainfall of short duration, and another shower fell during the morning of Sunday. Monday, alternately bright and cloudy, gave promise of more rain in the afternoon.—B. D., S. Perthshire.

A Giant Horse Chestnut Tree.—Amongst some giant specimens of Horse Chestnut trees in the grounds of Moncreiffe House, Perthshire, is a patriarch, believed to be the largest in Scotland, or possibly in Britain. At 1 foot from the ground, says “The Gardening World,” the circumference of the bole is 20½ feet, and 5 feet up the girth is 19 feet. The bole is 10 feet long, above which it gives off three enormous limbs, each equal to an ordinary sized tree. One of the largest of the limbs, torn off by the memorable hurricane, which blew down the Tay Bridge in 1879, was computed to weigh about 2 tons.

An Agricultural College in Edinburgh.—Efforts are being made to have an Agricultural College established in Edinburgh. The scheme that has been drawn up by the very influential committee appointed for that purpose is a very practical one, and is intended to provide not only for the establishment of an Agricultural College at which a full course of agricultural education may be obtained, but also for the carrying out of agricultural experiments, and the giving of practical extension lectures throughout the associated counties by the teaching staff of the College. We presume the College will follow the pattern of the Yorkshire College at Leeds.

Temple Flower Show.—Every year the desire of growers to exhibit at the Temple Show of the Royal Horticultural Society increases, and the officials of the Society have a very anxious task in endeavouring to do justice to those growers who regularly support the fortnightly shows of the Society held at the Drill Hall, Buckingham Gate, and yet at the same time to encourage others also to come forward. The space is absolutely limited by order of the Temple authorities; no more or larger tents may be erected, hence every new exhibitor whose entry is accepted means curtailment of the space allotted to previous supporters. The judges will meet at the secretary's tent at 10.30 A.M. on May 22nd, at which hour punctually the tents will be cleared of all exhibitors and their assistants. The Fruit, Floral, and Orchid Committees will assemble at the secretary's tent at 11 A.M. sharp, and the show will be opened at 12.30. All plants for certificate must be entered on or before Friday, May 17th. Address, Secretary Royal Horticultural Society, 117, Victoria Street, Westminster, S.W.

Our Gardening Charities.—Provincial gardeners are not able to attend the annual festivals and dinners of the various gardening charitable institutions whose headquarters are in London; they only hear of what takes place by means of the Press, and appeals made on paper lose a great deal of force from the lack of known personality behind them. But these printed reports convey that which is spoken by earnest workers, whose desire is to bring comfort, or at least some amount of security, to infirm old folks or fatherless young ones. The suggestion was made some years ago, through the pages of the Journal, that every gardener in the United Kingdom might make the sacrifice of one day's wages annually, and contribute the amount either to the Gardeners' Benevolent Institution or the Gardeners' Orphan Fund, as they thought best. We would be gratified if any appeal of ours caused our non-subscribing readers to give the question consideration. The addresses of the secretaries of these charities are frequently given. A report of the annual dinner of the Gardeners' Orphan Fund appears on another page.

Wallingford (Berks) Horticulturists.—A public meeting, under the presidency of the mayor, was lately convened at Wallingford for the purpose of considering the best means of enlarging and extending the operations of the horticultural society there. Two committees were elected, an organising and an executive committee, the latter to arrange the shows.

Forthcoming Flower Show at Ore, Sussex.—It has been decided to hold the Ore annual flower show on July 17th at Fairlight Place, by the kind permission of the Rev. W. C. Sayer-Milward. Attractive will be provided in the shape of sports for children and adults, and the band of the Ore Volunteers will be engaged. The Rev. W. C. Sayer-Milward and Mrs. Sayer-Milward have promised to help the committee in every possible way, and half of the £20 required for the guarantee fund has already been promised.

London's Cedar Tree Park.—Walpole Park, lately purchased by the Ealing and District Council for the perpetual use of the inhabitants of Ealing, was opened on Wednesday, May 2nd, by Lord Geo. Hamilton. It is situated nearly in the centre of the town, and consists of about thirty acres of land, with the Manor House. It is beautifully wooded, and the Cedar trees on the lawn at the rear of the house are probably over 300 years old, and are said to have been among the very first planted in England. The estate forms part of the Manor of Pitsinger, and was the property of the Gurnells, for whom Dance, the architect, erected a residence on the west side of Ealing Green. Subsequently it came into the hands of Sir John Soane, the architect, who took down the greater portion of it and built the present mansion.

"Fruits, Nuts, and Vegetables."—Vegetarianism gains ground, if but slowly. There are numerous publications devoted to the interests of the upholders of this school, and booklets are continually appearing. "Fruits, Nuts, and Vegetables: their Uses as Food and Medicine," is one of the most recently published, and deals with the properties and actions of vegetables upon the human system. The author (Mr. Albert Broadbent) also treats at length on how to cook all those vegetable subjects usually (and unusually) placed on the dinner or luncheon table. He has a few lines on Mushrooms, though under this heading he might very well have added further notes on other edible fungi. Even the Stinging Nettle has its properties and values detailed. The booklet ought to be of worth to those who affect the old rural cures by means of natural herbs. The printing, paper, and general arrangement is neat, pleasing, and good. The price is 6d. nett.

Our Debt to the Microbe.—Perhaps we have been rather unjust to the little microbes. It takes all sorts to make a world, and just as there are good angels and bad, so there are beneficent as well as noxious microbes. If the microbe is responsible for the torture of our sick bed, to him also must we refer the delights of our banquets. So, at least a German professor has discovered, says "The Morning Leader." I is a particular microbe that gives its aroma to a Havana cigar, just as it is a native microbe which makes the fortune of the Bordeaux wine-grower. It seems that one may even ennoble the flavour of the common weed from which our cheap tobaccos are made by inoculating it with the Cuban bacillus. The day will come when we shall all select our wines with complete indifference, and fill our cupboards with the cheapest cigars, secure in the knowledge that we need only open the magic phial in our cellar and let loose the proper microbe in our closets in order to have the wine or tobacco we desire. When that day arrives the microbe will have justice.

Beech Seedlings as a Salad.—A gentleman from Bognor, says the "Daily Telegraph," bids fair to become as great a benefactor to mankind as he who makes two blades of grass grow where only one grew before. He has discovered nothing less than a new vegetable. His story had better be told in his own words: "While walking along the border of a Beech plantation on top of the Sussex Downs, the appearance on the turf of thousands of tiny Beech trees, with their two beautiful rounded leaves peeping above ground, arrested my attention. At the moment I was eating a sandwich, and as there was no other 'salad stuff' near at hand I stooped and filled my mouth with a few of the succulent green morsels. I afterwards gathered a few hundreds of the more tender-looking heads, and determined to have them cooked and served at home as spring greens! My wishes in this direction were carried out, and I thoroughly enjoyed my new vegetable. The flavour was, perhaps, not so pronounced as Asparagus or stewed Celery, but in the absence of such like delicacies I found 'Beech greens' an excellent makeshift."

Botanists on Tour.—The Brussels Royal Linnean Society is organising a party to visit Kew Gardens, Richmond Park, Hampton Court, Slough, and Broxbourne on the 25th inst.

Excerpta.—In the fire at Messrs. Smith & Son's nurseries at Darley Dale, Derbyshire, last week, no fewer than 30,000,000 young plants were destroyed. * * Although there are 214,000 acres of orchards in England, yet we buy 100,000 tons of Apples abroad in a year. * * The Grape has more sugar in it than any other fruit, nearly fifteen parts in 100 being sugar. The Peach has least, only 1½ per cent.

What Deer Forests Cost.—Some interesting particulars of the amounts spent on Highland deer forests come from Invergarry. An estate agent (factor) there said he had obtained returns of the expenditure on fifty-two deer forests for the period of forty years previous to 1883, and they showed that £2,224,625 had been expended. Since then the rate of expenditure had gone on increasing. During the last ten years Sir John Ramsden had been spending at the rate of £15,000 a year on his Highland estate, and the Duke of Portland from £10,000 to £12,000.

Road Trimming by Machinery.—A new machine for trimming and edging the sides of public highways has lately been tried in the North. The machine was attached to the hub of a steam road roller, and a feature of its work was that it made a channel of the roadside of the same relative level as the road itself, no matter whether the ground was hard or soft. The paring of the edge is done by a revolving steel cutting disc, and the bottom of the channel is cleaned out by adjustable plough-like shares, which leave a smooth bottom, and place all waste material in a row, with the turf cut into 15-inch lengths ready for removal.

Of Interest to Ornithologists.—The following pleasant bird tale appeared in the "Evesham Standard"—"An Evesham gardener has a hovel on the Worcester Road, where a remarkable domestic drama of bird life is being enacted. About a fortnight ago the gardener saw a thrush's nest in a conspicuous position on a crate in the hovel, and found that it contained a thrush's egg and a blackbird's egg. Since then six other eggs have been deposited, and the nest now contains four thrush's eggs and four blackbird's. The hen thrush and hen blackbird have been seen sitting on the eggs at different times, and they are apparently very friendly." It will be interesting to hear what happens when the young birds appear.

French Horticultural Students' Tour.—Under the guidance of their director, M. Potier, the students of the school of Le Nôtre recently enjoyed their annual tour along the coast of Azur in Provence, France. They were *en voyage* from the 2nd till the 13th of April, and visited the public and private gardens at Hyères, Cannes, Golfe Juan, Antibes, Nice, Mentone, and San Remo. They were allowed to visit the most renowned villa and hotel gardens of the littoral. The exotic flora, which is now perfectly acclimatised along this part of the Mediterranean, was greatly admired, and of much interest to the budding horticulturists. The party were, furthermore, fortunate in reaching Nice and Toulon respectively at a time when horticultural exhibitions were being held, so that they had a splendid opportunity of studying the principal products of the regions around these towns.

Phytopathology.—"As a distinct and systematised branch of botany," says Professor Marshall Ward in his "Diseases in Plants," "phytopathology (from Greek words which signify to treat of diseases of plants) is a modern study. The history of it only dates from about 1850, though the subject had been treated more or less disjointedly by several authors during the preceding century, and isolated records of diseased crops, fruit trees, &c., exist far back in the history of Europe. The existence of mildews and blights on cereals, indeed, was observed and recorded by the writers of the older books of the Bible, as well as references to blasted Fig trees in the New Testament. But, as a rule, we only find disjointed notes by writers on the subject of plant diseases during the early and middle ages, and downwards. With the nineteenth century, and the founding of the modern theories of nutrition by Ingenhousz, Priestley, and De Saussure, we find a new era started. As the discoveries of the microscopists continued to build up our knowledge of the anatomy of plants, and began to elucidate the biology of the fungi and other cryptogams, while the chemists and physiologists laid the foundations of our modern science of plant life, it gradually became possible to tabulate and classify plant diseases, and discuss their symptoms and causes in a more scientific manner."

Sir George King, to whom the Linnean Society has awarded its gold medal, given alternately to a botanist and zoologist, is the late director of the Calcutta Botanical Gardens. He has published numerous and important papers dealing with Indian and Malayan floras. Sir George was president of the section devoted to botany at the Dover meeting of the British Association in 1899, on which occasion he gave in his address a masterly account of the history of Indian botany. The medal will be presented on 24th May.

Australian Birds.—The indigenous flora and fauna of New South Wales excite much attention in scientific circles, owing to many of the species being quite different from those found in other parts of the world. An eminent naturalist has reckoned that there are 690 distinct species of birds in Australia, being more than the number found in Europe, and nearly as many as inhabit and visit North America. In Gould's work on the "Birds of Australia" are figured many of the most beautiful kinds inhabiting the continent, such as the paradise bird, lyre bird, mound-builder, and a large number of parrots and pigeons.

Express Forcing.—Some of the daily papers have been ventilating what we presume they imagine to be a new system of Asparagus forcing. The paragraphs tell us that: "Successful experiments have been made recently in the forcing of the growth of Asparagus in the field in the winter by the help of steam. Narrow trenches about 4 inches deep are dug between the rows, and covered with boards, so as to form little tunnels. Steam from a boiler is forced into the tunnels through a hose, penetrating the soil, and keeping the latter moist and warm. The process has to be performed only once a day, for five minutes at a time, and the results obtained have been quite remarkable." Possibly; yet we, in this country, have known of the system, and have not seen the advantage of employing it.

Variorum.—We notice that the Leek Agricultural and Horticultural Association have, during 1900, added to the previous balance they had in hand. Their surplus funds are now £170 13s. 2d. * * The German Rose Society has just published a select list of 300 Roses, embracing the best varieties of the several classes and selections. * * Near Mickelour, in Scotland, there is a Beech hedge nearly half a mile in length, and 100 feet high, planted in 1745. It is still trimmed about every ten years, and to all appearance is in perfect health, "one of the arboreal wonders of the world." * * The Chicago florists are agitating against street flower sellers. Petitions have been signed and presented to a "Judiciary Committee" for consideration.

The Sugar Tax.—Writing to a morning contemporary on the question of a probable sugar tax, a correspondent says he could not believe the Government would put a tax upon this important article. He goes on to write:—"Thanks to cheap sugar, several industries, including that of fruit production for jam, have been developed in the most extensive manner, and as jam making opens up an outlet for surplus fruit, enabling growers to grade out the finest specimens for sale fresh, at higher prices in the market, it is clear that a tax upon sugar would seriously injure English fruit growers. I fail to see how the Colonial Secretary, of all men, could sanction any such tax. He has subsidised the shipment of fruits from Jamaica at a total cost of £400,000, spread over a term of years. It seems to me impossible for any political party to subsidise a colonial fruit industry at the same time that the home fruit trade is to be seriously handicapped by a tax. Preferential patronage and protection simply hinder the natural expansion of all industries."

The Bulb Industry in East Anglia.—There seems to be a prospect that before very long the eastern counties will oust Holland from the position it has so long held of chief contributor of bulbs to the English market. Every year immense quantities of Snowdrops, Daffodils, Narcissi, and other bulbous flowers are poured into the London and great provincial markets. Where the Norfolk and Lincoln marshes once existed, there is now one of the richest alluvial tracts in England. The soil is light but not dry, and is very easy to till. In the early spring there are acres of Daffodils, Narcissi, Snowdrops, and Violets to be seen. The bright-looking Pheasant's-eye and the stately N. Emperor help to make the scene very picturesque. For early markets the Daffodils are plucked as soon as they have what is termed a "crook" neck, and are then placed in sheds heated to a temperature of between 70° and 80°. They are put into troughs of soft water, and in two or three days the blooms are ready to be tied up in bunches of dozens and despatched by rail to Covent Garden and elsewhere.

The Gardeners' Royal Benevolent Institution.—The Dean of Rochester, Earl Egerton of Tatton, and Charles E. Keyser, Esq., J.P., will be amongst the supporters of Lord Llangattock, who presides on the occasion of the annual festival of the Gardeners' Royal Benevolent Institution at the Hôtel Métropole on Wednesday, May 22nd. Early intimation should be given to the secretary, at 175, Victoria Street, S.W., by gentlemen who desire to be present.

Grafting Up to Date.—The "Fruit World" is responsible for the following:—"At a recent meeting of the Academy of Science in Paris, Mons. G. Bonnier presented a note concerning some very interesting experiments in grafting plants, the results of which contradicted the generally accepted opinion that only plants belonging to the same botanical family can be successfully grafted upon one another. Mons. Bonnier showed that recently plants of entirely different families had been grafted with success—for example, the Maple upon the Lilac, the Kidney Bean upon the Castor Oil Bean, and the Cabbage upon the Tomato."

Gardeners' Charity Guild.—Last year, and, in fact, for the past three years, the body of men who constitute the Gardeners' Charity Guild have done praiseworthy work in promoting an annual concert for the purpose of drawing in money, that was afterwards handed over to either of the gardening charities as a donation. Last year the handsome sum of £30 odd was raised from the Guild's concert at Cannon Street Hotel, E.C., and this was held during the month of March. Is the Guild still in union? and are efforts being made for any concert or festival this year?

Sussex Weather.—The total rainfall at Abbot's Leigh, Haywards Heath, for April was 2.45 inches, being 0.74 above the average. The heaviest fall was 0.72 inch on the 3rd; rain fell on fifteen days. The maximum temperature was 71° on 23rd, the minimum 28° on the 2nd; mean maximum 53.15°, mean minimum 38.02°, mean temperature 45.58° which is 1.57° below the average. The first half of the month was wet and cold, rain falling every day till the 16th. The "mat-warr" then set in, drying the ground extremely fast. The maximum, 71°, was reached on the 23rd, but the wind got back into the N.E. on 25th, and on the 27th the maximum temperature was only 54°, with slight frost on the grass on several mornings at the end of the month.—R. I.

April Weather at Belvoir Castle, Grantham.—The wind was in a southerly direction nineteen days. The total rainfall was 1.70 inch; this fell on fifteen days, and is 0.10 inch below the average for the month; the greatest daily fall was 0.34 inch on the 3rd. Barometer (corrected and reduced): highest reading, 30.256 inches on the 17th at 9 P.M.; lowest, 29.390 inches on the 15th at 9 A.M. Thermometers: highest in the shade, 75° on the 22nd and 23rd; lowest, 31° on the 17th; mean of daily maxima, 56.16°; mean of daily minima, 37.00°; mean temperature of the month, 46.58°; lowest on the grass, 24° on the 11th; highest in the sun, 128° on the 22nd; mean temperature of the earth at 3 feet, 43.13°. Total sunshine, 191 hours 51 minutes, which is 34 hours 19 minutes above the average for the month. There were no sunless days in April.—W. H. DIVERS.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901.										
April.										
and										
May.										
Sunday ..28	N.N.E.	deg. 46.1	deg. 40.7	deg. 54.9	deg. 31.0	Ins. —	deg. 50.0	deg. 50.5	deg. 48.2	deg. 25.1
Monday ..29	E.S.E.	51.4	44.1	59.2	32.5	—	50.0	50.3	48.5	25.1
Tuesday 30	N.E.	51.4	46.7	61.4	39.5	—	50.6	50.3	48.5	31.8
Wed'sday 1	E.S.E.	52.6	47.2	61.7	33.8	—	49.8	50.3	48.8	27.9
Thursday 2	N.E.	49.1	47.5	57.4	46.2	—	50.9	50.2	48.8	43.5
Friday .. 3	E.N.E.	52.9	49.0	67.0	45.3	—	51.5	50.2	48.8	39.0
Saturday 4	N.E.	49.7	40.8	59.2	38.9	—	52.3	50.9	49.0	29.5
MEANS ..		50.5	45.1	60.1	38.2	Total —	50.7	50.4	48.7	31.7

The greater part of the week has been dull, with rather keen north and east winds.

The Cedars.

At a meeting of the Leeuwenhoek Microscopical Club, held some time ago at Ashfield, College Road, Whalley Range, Mr. Charles Bailey read a paper on the Cedars of Lebanon, India, and Algeria. He remarked that these Cedars are invested with singular interest on account of their botanical relationship, their geographical distribution and localities, their great age and durability, and their peculiar organisation. There are three geographical forms of the Cedar, not pronounced enough to warrant their elevation to the full dignity of species, and yet sufficiently distinct as to be easily separable by the forester or nurseryman, and to be regarded in a popular sense as different species of the same genus. But, as Sir Joseph Hooker pointed out in the classical paper which he published in "The Natural History Review" for 1862, botanical science now regards them as one super-species. The Cedar of Lebanon (*Cedrus Libani*, *Barrelier*, is the typical form, and is readily recognised by its branches and foliage growing in flattened masses, as though the fabric of the tree was built up in tiers; its trunk is much shorter than its primary branches, which are very massive; the extremities of its growing branches are slightly pendulous, and the leaves are dark grass-green in tone. The Indian Cedar, or Deodar (*Cedrus Deodara*, *Loudon*) has its main branches shorter in proportion to the length of the trunk than is the case with its two allies, so that it possesses a more pyramidal outline; the terminal growths are more slender and very pendulous, while its leaves are as long as, or longer than, those of the Lebanon Cedar, and of a paler and more glaucous shade of green. The Algerian Cedar (*Cedrus atlantica*, *Manetti*) differs from the others by its greater tendency to produce a perfect erect and rigid trunk; its branches are of unequal length, and from this circumstance its mass has a more broken outline than its congeners; the terminations of the growing branches are more rigid than they are in either of the other two, being rarely or never pendulous; its leaves are shorter and even more glaucous than the Deodar, often becoming quite white or silvery in tone.

Characteristics.

It is thus seen that the greatest difference between the three forms rests mainly in the habit of growth; and yet this habit is so unstable that most nurserymen are able to supply each of the three forms in several variations, such as colour of foliage, rigidity of stem and branches, and length of leaf, thus showing the close inter-relations that exist between them. Sir Joseph Hooker and the late Professor David Oliver made a careful collection and comparison of the fruiting cones, cone-scales, seeds, and their wings, anthers, and leaves, from materials at Kew and elsewhere, and from these they drew up the characteristic aspects of each form, which they represented on three plates published in the "Natural History Review" of 1862. The figures of the three forms look distinct enough on paper, especially the Cedar of Lebanon, but the transitions between each are so frequent, and the outlines of the organs of the same form so often overlap, that specific distinctions vanish. Other characters, says the "Manchester City News," have been relied upon for differentiating them, such as the structure of the bark, wood, and leaves; the degree of intensity of their resinous odours; their periods of flowering and leafing; their mode of germination, hardiness, growth, and duration; but all these break down when they are put to the test.

An Arctic Mountain Growth.

The distribution of these three Cedars in space is of peculiar interest. They occur in a narrow belt along the thirtieth degree of north latitude, beginning a few degrees above it in Morocco, and falling a few degrees below it in north-western India. This line extends over eighty degrees of longitude; its central portion is occupied by the Cedar of Lebanon in various districts of Cilicia and Syria; 1500 miles to the east of this area we come to the region inhabited by the Deodar, in the forest of Afghanistan, Baloochistan, and the Himalayas; 1500 miles to the west of the Syrian area we reach the region occupied by the African Cedar in Algeria, and Morocco on the slopes of the Atlas Mountains. In recent years an intermediate form has been discovered in the mountains of Cyprus, which has some affinities with the Cedar of the Atlas range, but whose alliance is mainly with the form which is found on the adjacent Cilician and Syrian mainland. The distribution of these Cedars in

vertical range is not less remarkable than their geographical distribution. All three are restricted to mountainous regions; in the Hindu-Koosh the Deodar ascends to elevations of from 6000 to 12,000 feet in height; while the other two occupy regions of about half those elevations. They all occur in localities which possess abundant evidence of former glacial action, thus indicating their natural affinity for a more arctic climate than what they now enjoy. The Cedars in the well-known Kedisha gorge of the Lebanon occur on the surface of old moraines of from 80 to 100 feet in depth, on the side of a stream which has cut its way through the débris, and whose sources are in the surrounding heights above the corrie in which the moraines have been stranded. Similar evidence of glacial conditions prevail in the stations for the Deodar, Hooker having found abundant evidence in Sikkim and Nepal of glaciers having existed in past ages 4000 feet below the lowest altitudes at which these trees occur in these regions. The like set of conditions appertain also to the Cedar of the Atlas range.

A Dying Species.

The conclusion, therefore, is reasonable, that when the Cedar was in the zenith of its most prolific growth it was when an arctic or semi-arctic climate prevailed, and that probably there was once a belt of Cedar forests extending all the way from the Straits of Gibraltar in the west, to the recesses of the mountains of north-western

India in the east. As the severity of the glacial epoch became merged, stage by stage, into the more temperate conditions of prehistoric and historic times, the Cedar forests passed through a severe struggle for existence; their continuous line became broken on the lower ground; their flanks were cut off one by one by the increasing dryness and rising temperature; until the last remnants of a once mighty army have had to betake themselves to higher and higher regions, where at the present day they could alone find the nearest approach to what they enjoyed in their palmiest days. Thus the survivors of an ancient and noble race are left on the Atlas, the Lebanon, and the Himalayan ranges, where they represent the "survival of the fittest," and where they are at best a decaying tribe. It is in this way that the establishment of three separate forms of one antique and lost species may be accounted for; the different surroundings of the three principal areas now occupied by the survivors explain the variations in their modern geographical forms, in their habit of growth, in the shape and size of their cones and cone-scales, in the size of their seeds and the forms of their wings, in the length of their leaves and the arrangement of the stomata; and they also furnish the clue to the



AGAVE ATTENUATA IN MISSOURI BOTANICAL GARDEN.

close inter-relations of all three forms with each other, and of the many divergences which each of the forms presents. Taken as a whole, the story of these Cedars is a beautiful illustration of an ancient species in a state of evolution.

(To be concluded.)

Missouri Botanical Garden.

WHERE in the wide world is there greater scope and possibilities for an unexcelled botanical garden than exists at St. Louis in Missouri, one of the largest of the United States of America, and situated at the junction of those two mighty rivers, the Mississippi and the Missouri? We are glad to find that the beginning of what may ultimately develop to be a great botanical centre, sending forth its lamp of light and

of exchange, 5272 herbarium specimens were distributed to correspondents." A general catalogue of the library is kept abreast with the constantly increasing additions made to the bookshelves. The trustees are able, after all expenses were paid, to carry forward a surplus of over 15,000 dollars.

The rest of this interesting report includes scientific papers, on "A Disease of *Taxodium distichum*," with coloured plates, &c., "A Revision of the American Species of *Enphorbia*," with fifty-two species illustrated, and notes on species of *Agaves*. Our figure of *Agave attenuata* is from a photograph of a specimen in this Missouri garden. The specimen as seen in the illustration began to send up its spike about November 1st, 1898. On November 5th the spike measured 2 feet 4 inches; November 10th, 3 feet 4 inches; November 16th, 4 feet 4 inches; November 19th, 5 feet; November 28th, 5 feet 6 inches; and finally it reached 6 feet (?). It began to flower on December 9th, and continued till January, 1899. The plant in most respects corresponds closely with those specimens which have flowered in Europe, although none have been described as having so many flowers in a cluster—that



ALOCASIA ODORA IN MISSOURI BOTANICAL GARDEN.

learning, has been instituted at St. Louis, in the State named. Some time ago the eleventh annual report reached us, and from it we gather that new buildings and new land are being constantly added to the embracement of the garden. A board of trustees manage the working of it, Mr. R. J. Lackland being president, and he, together with the secretary, have drawn up the report, to which we now refer.

Considerable additions were made during 1900 to the plants cultivated in the several departments of the institution, the total number of species and varieties in cultivation now being 9127, of which 5875 are annuals or hardy perennials, and 3252 receive the protection of plant houses during the winter. The plants added during the year represented 227 entries. The number of visitors the garden receives during the cycle of the seasons is not great when we compare this Missouri Botanical Garden with some of ours at home here. In midsummer 1898 a definite count showed that 89,102 persons visited the grounds during that year. The most on any one day was 8837, when an "open Sunday" was announced. The herbarium seems to increase hugely, for "the material actually incorporated during the year (1900) amounted to 32,890 sheets of specimens. Of this amount 15,863 were bought, 4930 pertain to the Redfield herbarium, 1451 were collected by garden employes, and 10,646 were presented chiefly in exchange for garden publications and specimens. By way

is, six to eight. The illustration on this page shows a bed of *Alocasias* in the grounds.

The report extends to over 150 pages, exclusive of illustrations; and is printed in bold, clear type, on the best quality paper, and is bound in strong dark green covers. It is altogether a highly creditable report, and of much value.

May-month and Sunshine in London.—London folks rejoice in the fact that May is usually their most sunshiny month, the average attaining to 183 hours, exceeding Edinburgh's mean by eighteen hours, and that of Glasgow by twenty-four. Still Londoners, according to the "Westminster Gazette," have to acknowledge the superiority of more southern stations—such as Brighton, with an average of 216 hours; Hastings, with 238; and Guernsey, with 265 hours. The rainfall is usually about an inch and three-quarters, though last year it reached only half that amount. The average London minimum for night temperatures is 45°, and the mean day maximum 63°; last year, however, the thermometer fell to 37°, and in 1892 to 29°, whilst in 1880 a reading of 86° was recorded. A cold spell often occurs towards the middle of the month, at times accompanied by frost.



Plants within Plants.—A very striking group of Protococcoideæ is formed by some unicellular Algæ which live in the intercellular cavities of certain plants, such as *Lemna trisulca*, *Lysimachia Nummularia*, and *Ajuga reptans*; living *in* but not *on* their hosts.

Primula rosea.—One may travel far before they come upon a finer or more showy Primrose than this old favourite. The Drill Hall on the 23rd ult. was graced with some very fine pans from Woking Nursery. These pans were of a large size, perhaps 1½ foot in diameter. The plant is so floriferous, so neat, and has such a brilliant, pleasing, and distinctive rosy-pink colour, that among hardy spring flowers it is quite unique. As regards culture, a shady, moist, peaty soil answers its demands.

An Indoor Waterpool.—Two of the prettiest features of the Himalayan house at Kew are the waterpools at the eastern end, surrounded as they are with huge boulders of yellow sandstone, and fringed with suitable plants. These have now lost their newness, and consequent artificial appearance. The water is perhaps 2 feet or 2½ feet deep, and upon the surface lie spread the odorous white blossoms of the Cape Pondflower. Growing from the chinks between the boulders are robust plants of the Megasea (*Saxifraga Stracheyi*) and Aaron's Beard (*S. sarmentosa*). The yellow variegated variety of *Tussilago farfara* is also present, and recently some splendidly flowered bulbs of *Narcissus Empress* added charm to the feature as a whole. *Primula rosea* and *P. vulgaris*, together with *Oxalis* in variety, *Alismas*, *Scirpus*, *Osmunda* species, and other varied subjects line the edges of these pools, which are about 8 or 9 feet in width and breadth. The beautiful gold fish in the water are greatly admired.

Cactus Dahlias.—If you wish to grow Cactus Dahlias for exhibition, the following are amongst the best:—Up-to-Date, crimson; William Treseder, a fine white; Magnificent, salmon rose; Arachne, white with crimson; Emperor, plum; Major Weston, crimson; Cornucopia, salmon; Mrs. Carter Page, crimson; Mrs. J. J. Crow, fine yellow; Uncle Tom, dark, almost black; Mayor Tuppenny, fine orange shading to fawn; and the popular Starfish, a glowing scarlet; these are amongst the best, but the amateur may also add the Matchless, Gloriosa, Lady Penzance, Ajax, Red Rover, Charles Woodbridge, Loyalty, and Mrs. Sanders. The above may be regarded as first class exhibition flowers, and most of them as good garden ornaments. There are, however, some that are good for producing exhibition flowers, while they are poor as decorative plants; for the latter purpose we may add to the above such sorts as Red Rover, Loadstone, Ruby, Cycle, J. E. Fremer, and John Goddard. These are the cream of the Cactus Dahlias, and should be found in every collection.

Grapes.—This luscious and refreshing fruit possesses valuable food and medicinal properties. It contains 3 ozs. of solid substance in a pound; much sugar, also gum, tannin, bitartrate of potash, sulphate or potash, tartrate of lime, magnesia, alum, iron, chlorides of potassium and sodium, tartaric, citric, racemic, and malic acid, and some albumen and azotised matters, with water—a most formidable list. The skins and seeds of the Grape, says Albert Broadbent, in "Fruits, Nuts, and Vegetables," are astringent and constipating, the juice and pulp are laxative. For this reason they are of the greatest value as a food for young children when teething. The seeds should be taken out and the skins removed, the juice and pulp only being given without other food. This simple remedy will be found to be superior to teething powders. It usually works like a charm. The juice is also good for thrush in children. The juice of Grapes is about the only food that is taken into the circulation without apparent digestion. It warms and fattens the body quickly, and is invaluable in severe colds and fevers. The juice of sour Grapes is useful for bruises and sprains. Grapes quickly promote a flow of urine when taken in quantity. They are not recommended to those suffering from slow digestion and acid dyspepsia, or those suffering from gout or rheumatism. On the Continent what is known as the Grape cure is practised, patients consuming from 3 lbs. to 6 lbs. daily. This cure is of great value to those who have blocked the system by overfeeding.

Gentiana acaulis in Pans.—Much more might be done with hardy plants if growers would more frequently give them the advantage of pot or pan culture. Such a plant as the one named above makes a really splendid greenhouse or conservatory subject for this time of year. The foliage makes a first-rate contrast and foil for the deep ultramarine blue of the tubular flowers. When grown under glass the flower stalks lengthen, and become more graceful than when the plant has the full flush of outdoor hardiness. Moss can be used over the surface soil of the pans.

Muscari conicum Heavenly Blue.—Even though this Grape Hyacinth were mentioned in every number of the Journal, no one surely would say that it was space needlessly filled. We can never have too much of a good thing, as the old aphorism says, and certainly if only gardeners knew, or could see, the aggregation of this deep, shining, blue-flowered plant growing from a grassy bank, as seen in a garden near Surbiton, they would determine, I feel sure, to plant a few dozen bulbs in the autumn. The effect, when a mass of this plant is seen, is indeed charming.

Lathyrus (Pea) differs from the Vetches mainly in having fewer and larger leaflets, broader petals, and the flattened styles downy only on the inner side, being quite glabrous on the outer. The two commonest British species are *L. pratensis* and *L. macrorhizus*. *L. Aphaca* has the entire leaf converted into a tendril, the ordinary leaf functions being performed by the large foliaceous stipules. *L. sylvestris*, the Everlasting Pea, occurs in many localities. The Everlasting Pea of our gardens is known as *L. latifolius*, but is supposed to be only a variety of the wild species. The Sweet Pea of our gardens, *L. odoratus*, is a native of Sicily and Southern Europe. The ordinary garden or field Peas are usually regarded as belonging to a distinct genus, *Pisum*; but, according to Professor Oliver, there seems no sufficient reason for this separation.

Old Double Primroses.—Thanks to a few of the hardy plant nurserymen, the beautiful little double Primroses, once the pride of every old-fashioned garden, have been preserved to us; and as the taste seems to be reviving in favour of many old-time denizens, the double Primroses may also share in the good fortune of becoming popular. Surely nothing under our northern sun is prettier than the mauve-coloured rosette flowers of the Double Mauve Primrose. This variety is exceedingly floriferous, and upon my word it is one of the showiest dwarf plants anyone could name for early spring flowering. Besides this, there are the Double White, Double Sulphur, Double Lilac, all of which are included in the Messrs. Barr's beds at Long Ditton. It would certainly be a gain and a grand feature to many gardens were the double Primroses employed in beds and as edgings.

Carnations.—In his lecture before the Workmen's Club, Kidderminster, Mr. C. Herbert recommended the following varieties of Carnations as suitable for gardeners in the Midlands:—Robert Houlgrave, J. S. Hedderley, Master Fred, George Rudd, W. Skirving, George Melville, Gordon Lewis, Sportsman, Mrs. Rowan, John Bixton, John Wormald, Brunette, Isabel Lakin, Thomas William, Mrs. Gorton, Miriam, Amy Robsart, Elizabeth, Mrs. Payne, Mrs. Sharp, Favourite, Nellie, Pride of Seton, Helmsman, Her Grace, Seagull, Exile, Mrs. James Douglas, Germania, Mrs. Colby Sharpin, Comet, Britannia, Nabob, Dick Donovan, Persens, Monarch, Brodrick, Eldorado, Golden Eagle, Czarina, Voltaire, Lady C. Walsh, The Gift, Miss Mackenzie, Algol, Clara Butt, Mrs. Douglas, Mr. Nigel, Wanderer, Hygeia, Mohican, Mrs. Tremayne, His Excellency, Stanley Wrightson, Bertram Thomson, Mrs. R. Sydenham, Ladas.

Propagating Violets.—For frame culture few plants are more valuable in winter and spring than Violets, as they are always acceptable, but too often one finds, instead of well-developed blossoms with fine foliage, only insignificant-looking flowers and poor leaves. This is often brought about by neglecting to remove the runners, and thus the bed, instead of presenting distinct, healthy clumps, is nothing more or less than a confused mass of roots. Those who have Violets will find that year-old clumps are beginning to throw off runners. These should be severed and planted separately in good loam and leaf soil, with old manure added. Beds so made should be on a north or west border, where the sun is off a portion of the time, as coolness is necessary for them. Violets enjoy copious supplies of water during the summer, and towards September, before the frame-lights are placed over them, liquid manure will benefit them.



Grape Gros Maroc.

Is this variety of Grape worth growing? I am compelled to ask the question, owing to it proving unsatisfactory. We have three Vines growing in a midseason house. They broke into growth strongly, but have only two, three, and four bunches respectively on them. The Vines are planted indoors, but the greater part of the roots are outdoors. This being my first year in charge of these Vines, I am anxious to know, from any of your readers, if their experience is similar to mine in regard to this variety.—R. M.

The John Apple.

I WAS much interested in the remarks made by "G.," page 265, respecting the above Apple, and should have been glad if he had told us more about it. Like your correspondent, I am acquainted with the John Apple, though perhaps not so intimately, and I also made its acquaintance in Warwickshire, where a few old trees were highly prized in an orchard attached to an old homestead. Although I have made many inquiries, I have never met with the Apple in any county other than the one named, and should like to know whether it is confined to Warwickshire. Your correspondent does not exaggerate as to the good opinion held for it in the above county, which makes the fact more singular that the variety is not more generally cultivated.—G. H. H.

Pear Bergamotte Esperen.

THIS Pear is without a doubt one of the very best late varieties for the midland counties. Not only is its flavour excellent; it has the additional merit of being a sure cropper. After twenty-two years' experience in this district—at Burghley, Ketton, and Belvoir—I have never known it to fail; and if I were restricted to one late variety, this would be the one I should choose. It bears well on pyramids and bush trees here, and is not liable to grittiness, like *Nec Plus Meuris* and *Olivier de Serres*, both of which are excellent late Pears in some years, and not so good in others. All three of these varieties are free setters, and must be thinned severely in order to obtain fair sized fruits; and all must be left on the trees until the leaves are falling, and there is danger from severe frost. Another point worthy of close attention is to supply a sufficiency of water in dry seasons, especially during August and onward, until the fruits are gathered; and if the water has "a drop of something in it," the fruits and trees will benefit proportionately.—W. H. DIVERS, *Belvoir Castle Gardens, Grantham.*

I DO not think there need be any doubt as to the *bona fides* of this very excellent late Pear. My experience of it ranges over a period of twenty-two years (how time flies!) the commencement being at Holme Lacy, Hereford, and where it was considered as one of the very best winter Pears. At this place the trees were grown both against south and west walls, and which I consider is the true position for this variety to be grown to its fullest perfection. Grown in the open, either as a pyramid, bush, or espalier, its ripening is doubtful, being very irregular, and this, I think, is what has caused the misapprehension as to its regularity in this respect. My experience of Bergamotte Esperen grown in these latter forms is disappointing, the ripening being very erratic. In some seasons a few will ripen up, whilst the remainder will not pass beyond the "leathery" stage. I consider that it is a mistake to recommend this variety to be grown in the open, a south or west wall being its true position; if this is done, then the ripening will be regular. April is again too late to say that this Pear is in perfection; from early in the New Year throughout January is when it is at its best. This past season it was fully ripe at Christmas. It is only when grown in the open that April can be considered to have any claim, then the ripening is doubtful. Because a Pear will bear freely in the open (and Bergamotte Esperen is one of the most prolific in this respect) it is no criterion that the quality will be good.

Whilst on this subject I will name a very excellent late or April Pear, and this Bergamotte Hertrich, but it must be grown against a south or west wall. The following is the description as given in the "Fruit Manual" by the late Dr. Hogg, and as I had the selection and sending of the fruits there described, I can vouch for it. "Fruit, rather hollow, medium size, 2 inches high, and 2½ inches wide, Bergamotte-shaped, inclining to roundish turbinate, even in its outline,

except at the stalk, where it is furrowed. Skin, very much covered with ashy grey russet, through which the grass-green ground is visible; on the side next the sun there is a brownish tinge, and there is a patch of pale brown russet surrounding the stock and the eye. Eye, with narrow incurved segments set in a shallow and furrowed basin. Stalk, three-quarters of an inch long, inserted in a narrow cavity. Flesh, yellowish, with a greenish tinge under the skin, melting and juicy, with a rich flavour and fine aroma, somewhat resembling the Swan's Egg."

Another good late Bergamotte-shaped Pear grown in Worcestershire is Beurré Peran. This, I think, received an award of merit from the R.H.S. a few years back. This is a Pear which should also be made a note of; as it is in commerce there should not be any difficulty in securing trees. Like the preceding named, the trees should be grown against south or west walls.—A. YOUNG, *Witley Court Gardens, Stourport.*

Royal Horticultural Society of Ireland.

IT may interest your very able correspondent, "W. R. Raillem," to know that the Royal Horticultural Society of Ireland was the first horticultural society in the United Kingdom to bear the prefix "Royal." Respecting his criticism of the matter, Brock v. the R.H.S.I., he, "W. R. Raillem," has, I believe, endeavoured to analyse it as fully and fairly as one afar off could possibly do, but, having followed him to a finish, I find it difficult to draw satisfactory conclusions from his logical dissertation. That, of course, is probably more my stupidity than his fault. Still, as he is handicapped in having only a bare skeleton of facts to deal with, it would probably be necessary for one who is *au courant* with the doings of the Royal Horticultural Society of Ireland and its dealings with gardeners—one who is able to grasp the spirit as well as the letter of its laws—to do justice to all concerned; then, I think, Mr. Brock's action would be capable of a different construction than at present obtains.—K., *Dublin.*

Young Gardeners' Pay.

APROPOS of "H. G. C.'s" note on page 373, has he not, in his manner of championing the wages cause of young gardeners, placed a stumbling-block that may possibly trip up some bright young journeyman early on the path, or at least give him an opportunity for having a grievance early in life? "An Old Boy" may be permitted to tell his young friends of bothydom, although it is hoped to be unnecessary, that he is, as he was and will remain to the end, imbued with an earnest desire to help them, otherwise some may construe these opening remarks as antagonistic to their welfare in general and their pockets in particular. I sincerely hope that young fellows will read between the lines of "H. G. C.'s" comment, and well weigh the matter, that they may see things as they are and not as they seem. In the first place, apprenticeship to the "profession" is, I take it, rather the exception than the rule by which gardeners are made, but in any case this need not detain. What I would ask our boys to do is to compare their position with that of those serving their probationary term to a trade in the matter of pay; and if they do this impartially the comparison will, I think, be favourable to the bothy—to those whose pay, whilst receiving a practically free education, is self-supporting from the start, with those who have to be dependent on their friends for years. This should strike an initial blow at any real or imaginary grievance I would fain keep out of the bothy. Real or imaginary? Yes; it is admitted that in some cases, probably in many, possibly in all, there is room for improvement in the matter of pay; but I regard this as of far less serious moment in bothydom than it is to the head and tail of a garden staff, viz., the chief-in-charge and the garden labourers, and fail to see how the financial status of a gardener is to be raised without a trinity of factors in the calculation. As a master of young men, I should certainly derive unqualified pleasure in paying them higher wages than at present obtains, but cannot leave the labourers out of my thoughts, for they, too, are worthy of their hire, and must also confess that I should derive some pleasure from more pay myself. Nevertheless, it is more than doubtful how agitation at the present time would improve matters, especially in those cases—and they are not rare—where garden expenses are cut down to the finest point consistent with their up-keep, or even beyond that. The whole question, however, is one containing inherent possibilities of righting itself without external interference, which I honestly believe would do more harm than good. There are, in fact, signs of the times that it is already doing so; inasmuch as "H. G. C." says, "Can anyone blame an active and smart young man for taking to the khaki?" No, certainly not. I for one will praise him for serving his king and country in khaki, or anything else if he is thus disposed; or any youth whose end and aim is money would be ill-advised to qualify for a gentleman's gardener, but for those to whom the love of gardening holds the first and foremost place in their hearts, there is no need to tell them to stick to the blue apron; and if they cannot get more than 14s. per week and the bothy, they can live very comfortably on it and be very happy in their work. Such, at least, was the experience of—AN OLD BOY.

Gadding and Gathering.

"HERE AWA', THERE AWA'."

Daffodil Ideals.

THE following paragraph ought to have appeared along with the other notes on "Daffodils at Long Ditton" in last week's issue, but it was unavoidably eliminated. Speaking of the characters and forms of Daffodils, Mr. William Barr told me that whenever a seedling shows the least in inclination to have tied petals—that is, petals whose appearance suggests that they have not complete freedom to develop, in short, any petal not properly spread or arranged in position—is at once discarded. Form is a vital quality. Growers are seeking for other varieties of the cyclamineus and Queen of Spain types. The latter, unfortunately, proves useless for crossing purposes, as it is sterile. It is hoped that the dwarf little *N. cyclamineus* may yet give the start, and progress will follow. The idea is to transfer the reflexed habit of the perianth segments, seen in the above varieties, to the larger trumpet Daffodils. Up to a certain stage such a character would add charm to many of the larger trumpet sorts. It is certainly the reflexed habit which endows *N. cyclamineus* and the King and Queen of Spain varieties with the piquancy and exquisite elegance which they possess. It is a saying that possesses some amount of truth, that "the more there are, the merrier is the party." We may apply the sense, and say that the more hybridisers there are, the greater will be the variety we soon shall evolve, and the sooner will the "Daffodil ideals" be realised.

Acres of Glass.

Toward the northern reaches of London, that is, out Finchley way, the huge market gardens that supply our greatest city with some of those things that are good to eat and pleasant to behold, lie scattered. Two or three, at least, of the larger of them, consist of many acres of span-roofed and other glass houses. At Mr. James Sweet's (lately presented with the Victoria Medal of Honour in horticulture) the acreage of glass amounts to between thirty-five and forty; Mr. Peter Kay, a neighbouring marketman, has forty acres or thereabouts; Mr. Batho has somewhere about thirty; and there are numerous others with very extensive establishments. I enjoyed the privilege of a visit to the Whetstone *jardin maraîcher* on the second day of the present month. Here Mr. Sweet talked about his thousands of Heaths and other *Ericas* as though these were but everyday numbers in the trade. As a matter of fact he grows about 40,000 of these in 5 and 6-inch pots; *Cytisus*, almost as many; and the same with dwarf pot *Mignonette*, *Marguerites*, *Boronias*, and a few other extra popular market plants. The London public are virtually supplied with certain hard and some softwooded plants from this one market garden. To large towns in the Midlands, and even so far north as to Glasgow, enormous quantities of the plants named are annually despatched.

Mr. Sweet has long had a great reputation as an unexcelled Heath grower, and he still seeks to, and successfully, maintains his position. From the time the cuttings are first inserted till the plants are fully flowered, each successive operation is carefully considered, and long experience has taught Mr. Sweet and his growers just how his plants should be treated. Cuttings of the

Heaths are taken at all times of the year, though, perhaps, principally in January and February. Six or eight, each about 4 inches in length, are inserted around the inside circumference of 3-inch pots, and are rooted in low span-roofed houses. At the present time of year these houses are shaded with limewash. A temperature of about 65°, with a moderate amount of moisture, is allowed. No flowers are ever left on the young plants, but each is removed so soon as seen, to afford

the fullest amount of strength to the growing plants. They are kept pinched for the sake of good shape. Potting is performed only when the plants show to the trained eyes that a shift would benefit them. According to the state of the weather, and the growth of the plants, the time for placing them outdoors is governed. They are plunged amongst ashes in the open air, quite exposed, during the entire summer. The plants, as sold in the markets, are usually two and three years old. *Ericas Cavendishiana*, *magnifica*, *persoluta alba*, *hyemalis*, *erecta*, and such others, are the chief varieties that are grown at Whetstone.

The vineries are very numerous, and when I describe them as being from 184 feet long and 36 feet wide, up to 400 feet in length and 26 feet in width, I expect some of my readers will question whether there is not a mistake. To peer from end to end of one of those 400 feet vineries, with the bunches at present in their second stage of swelling, is like "perspectifying" through some close-cut pass of a Highland glen. The fine, clean, strong growth of every one of the Vines would please the hearts of our enthusiastic Grape growers. Outside and inside borders are provided, and both are well mulched throughout the summer, the dressings being put on just at this time. Before the littery stuff—not sappy muck, but dry London litter—is put on, the borders are all pointed over, and are heavily watered afterwards when the mulch has been

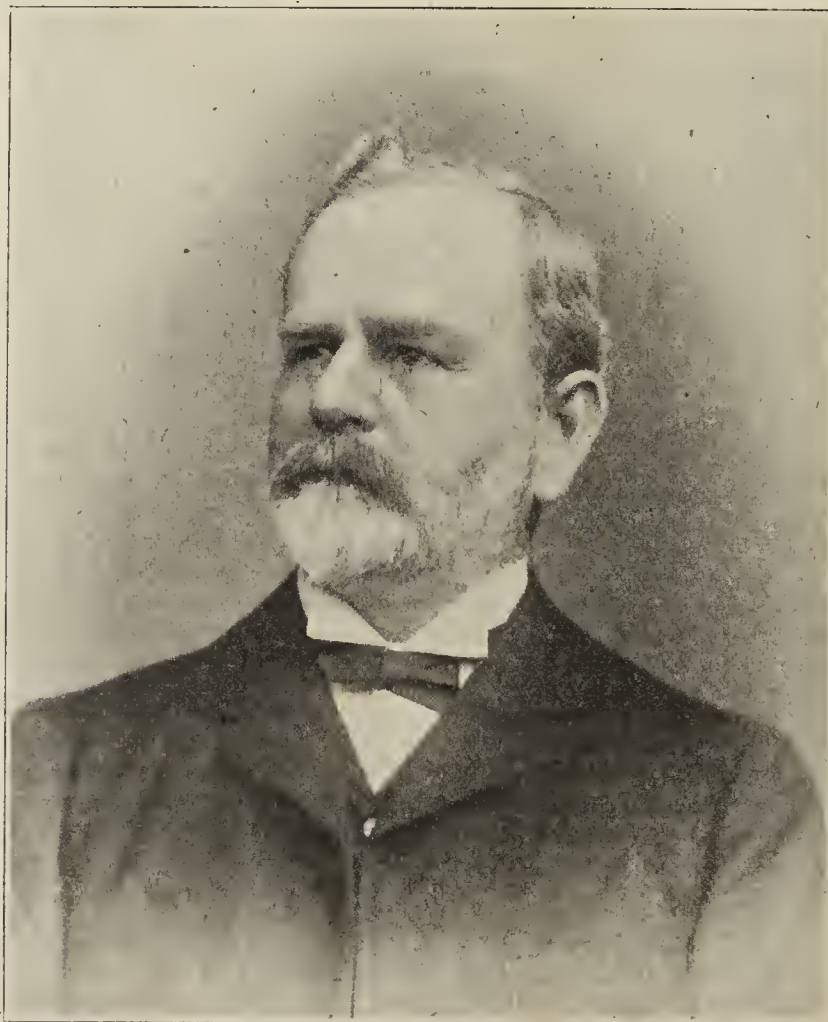
spread. In all the late house, two 4½-inch flow and two similar return pipes are sufficient. The top ventilators are intermittent—that is, the whole of the top does not lift up, but only parts of the sashes, at intervals of 6 to 10 feet. The Vines are all young, say up to twelve or fifteen years, and bear heavily and evenly. Altogether,

an hour spent in such a great market garden is very instructive and exceedingly interesting, and more so to anyone with reflective tendencies. In those vineries where young Vines have been planted, the entire central part of the house is devoted to planted-out Tomatoes, little more than a foot apart either way, and led up on slender canes, from the top of which a stout string is fastened, to afford greater steadiness. The variety named *The Trophy* is favoured. Such plantings are only looked upon as catch crops, and are rooted out before very long.—WANDERING WILLIE.

Choisya ternata.—Few shrubby plants are more popular for spring pot use than this white flowered subject. The individual flowers much resemble those of *Clematis indivisa*, but they are less in size, and perhaps are more severely white. The plant blooms in erect, nicely spreading trusses, and has very dark green ternate leaves. As a plant in 6-inch pots for the conservatory stage it is commendable for early use. It succeeds, of course, in the open air in borders and on rockeries. Where it does not flower well it is still good as a foliage shrub.



MR. A. MACKELLAR.



MR. OWEN THOMAS.

Retirement of Mr. Owen Thomas.

AFTER a period of ten years' successful superintendence of the gardens at Windsor and Frogmore, Mr. Owen Thomas, V.M.H., retires on a pension. He is to be succeeded by Mr. A. Mackellar, head gardener for many years at Sandringham. Mr. Thomas was born at Hermon, a small village in Anglesea, in 1843, and commenced his gardening career at Bodorgan, where he stayed for eight years. In the spring of 1863 he was transferred by Messrs. F. & A. Dickson to the gardens of the Hon. C. Parker Jervoise, Aston Hall, near Sutton Coldfield; and after two years here he became journeyman at Drayton Manor Gardens. In 1869 he took charge of the gardens at Drayton, and remained at the head for thirteen years. In 1882 he was appointed to the superintendence of the gardens of J. Corbett, Esq., M.P., at Impney, near Droitwich. Chatsworth was his next charge, and occupied our friend for eight years; and lastly, the Royal Gardens at Windsor. The accompanying portrait will recall Mr. Thomas's features to our readers. Mr. Thomas's successor is a man in the prime of life, and one of the best fellows in the profession. He has qualified for his high position at such well-known places as Hopetoun, Tynninghame, Chatsworth, Penrhyn; and was ten years head gardener to the Duke of Roxburgh, at Floors Castle, Kelso. He was born in the Highlands of Scotland. The accompanying portrait represents Mr. Mackellar as he was about ten years ago.

Obituary.

Mr. M. Davis.

It is with deep regret that we learn of the untimely demise, on the 3rd inst., of Mr. Michael Davis, who has had charge of the gardens of the Jesuit College, Manresa House, Roehampton, during a period of rather more than forty years. Mr. Davis was an Irishman, with all the geniality of his countrymen. He was an excellent cultivator of hardy fruits and vegetables, but was known to fame for the magnificent Vine that he raised from a cutting some thirty-eight or thirty-nine years ago. The rods were trained longitudinally, and as they extended year by year the house was increased in size to provide accommodation. At last no further additions were possible, and the building had to cease. Every year this splendid Vine bore hundreds of bunches, averaging about 1½ lb. in weight, and practically the whole of which were sent to market. The bunches were built up of berries of good size, which took on a very fine black colour, and developed a rich flavour. We tender our sympathies to the family, and can assure them that the name of Mr. Davis will live in posterity, as well for his uprightness of character as for having raised the Vine which has made Manresa House Gardens famous everywhere. The accompanying portrait, which we reproduce, was furnished in the *Journal of Horticulture* for August 24th, 1893, where, on page 167, will be found further notes of Mr. Davis and his work.

Mr. John Thomson.

It was our sorrowful duty to record the death of Mr. John Thomson, of Messrs. William Thomson & Sons, Ltd., Tweed Vineyard, Galashiels, in last week's issue. Mr. Thomson has died in the prime of life, after a long and painful illness, borne with exemplary patience. He died 27th April, aged forty-nine years, leaving a widow and one child. His removal is very much regretted, and he will be much missed by a wide circle of friends, by whom he has been known as a man of a most kindly and helpful disposition. All who knew him intimately in business matters found him most upright and conscientious, and gifted with a keen perception, taking a clear and comprehensive grasp of any question brought before him, and efficient in all business matters. He got his horticultural training under his late father, and it need scarcely be said that he was an expert, especially in all matters connected with Grape culture. His liberal sympathy gave him a competent knowledge of the feelings of his fellows, and his naturally frank and generous manner readily gained the good graces of those with whom he came into contact. Since his father's death six years ago, the management of his firm, Messrs. William Thomson & Sons, Ltd., engaged the greater part of his time; and, being a member of the Caddonfoot School Board and a County Councillor, his spare moments

were usually well occupied with the affairs of his own district. Notwithstanding all that, his letters to the "Scotsman," and other newspapers, showed that he observed and took an active interest in national and other events. Whether debating through the newspapers, or with a friend, he showed great quickness to discover a weak point in his opponent's arguments. In addition to the subject of this sketch, Caddonfoot churchyard contains the remains of the late Mr. William Thomson already mentioned, and also those of his elder son William.

Royal Gardeners' Orphan Fund.

Annual Dinner.

THIS yearly reunion of the members and friends of this Institution was held in the Victoria Hall of the Hotel Cecil on Tuesday evening, under the presidency of the Hon. W. F. D. Smith, M.P., who had on his right hand N. N. Sherwood, Esq., V.M.H., and on his left the Rev. W. Wilks, V.M.H. There was a fairly large gathering, including many of the leading metropolitan and provincial horticulturists. After the loyal toasts had been enthusiastically honoured, the chairman

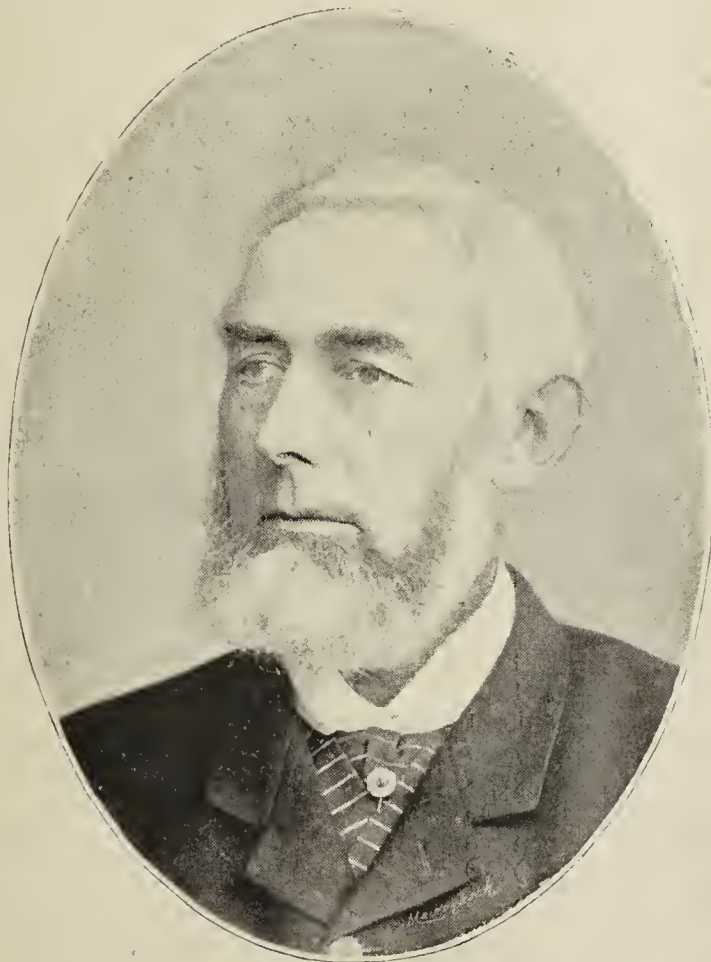
proceeded to the toast of the evening.

The chairman was convinced that everyone present would receive the toast of "The Royal Gardeners' Orphan Fund" with enthusiasm, and that many without the walls would be equally interested. He was glad to see that the love of gardening was increasing, and thought that everyone should do their best to increase it; but it was, he said, unfortunate that many who possessed gardens were not scientifically familiar with the subject, and these persons had to trust to the men for whose children this Fund was instituted to benefit. The love of gardening came with very early youth, but the results were often marred by an over-anxiety to ascertain what was proceeding beneath the ground. He was convinced that gardening, however humble, brought brightness into the lives of everyone, and for this reason he was most desirous of seeing the love of gardening fostered and cherished in the young and old. He made reference to pleasure gardeners, and to those who produced fruit and flowers for the market, and which were distributed to various parts of London and the provinces from Covent Garden. Vast quantities of these products were produced by English gardeners in English gardens. He asked those who were purchasing to think of those who had produced those things which gave them so much pleasure, and that they might extend their sympathy to the Fund for which they were gathered together to benefit. He explained how beneficial was the Fund, and considered its management most practical and

useful, and, further, pointed out how valuable the assistance must be to widows in educating their children, and starting them on the highway of life. The speaker further pointed out that the management expenses were so small that all the money subscribed went to orphans, and that none was lost in transit. He quoted figures in support of the charity, and pointed out that the committee looked for more annual subscriptions, as there was then a certainty in hand. He concluded by wishing the Fund all success, as he thought it was thoroughly deserving.

Mr. N. N. Sherwood, in rising to respond, thanked the chairman for his attendance, and for his remarks. The Institution was founded by gardeners in memory of the Jubilee of the Queen, and was sure it must be a source of satisfaction to those who were instrumental in its inception to see its present success. He thought it most satisfactory to know that the income was greater during the past year than in any previous season. Mr. Sherwood then mentioned how the money was passed to those for whom it was intended, and was not locked up in bricks and mortar, and referred to the heartrending cases that came before the committee. He appealed for the benefit of the orphans, and asked that more boxes should be used in gardens, and felt sure that the appeal made by the chairman would meet with the generous response that it thoroughly deserved.

Mr. F. Varley spoke to the toast of "Gardeners and Gardening," and Mr. T. W. Sanders responded. Both gentlemen made pertinent observations, and were listened to with interest. Mr. Arnold Moss made one of his characteristic speeches in proposing the toast of "The Visitors," for whom Mr. C. R. King responded. Mr. H. B. May proposed "The Chairman," to which the Hon. W. F. D. Smith responded briefly.



MR. M. DAVIS.

Mr. W. Ponpart proposed "The Press," and Mr. J. Lanyon responded. It was certainly a matter for surprise to see that no member of the gardening Press was asked to reply to the toast. The gardening Press has done more in one year to support the Royal Gardeners' Orphan Fund than the general Press since the establishment of the charity. Representatives of all the gardening papers were present, and it would have been nothing more than graceful if one of these gentlemen had been deputed to respond to this toast.

The subscription list was headed by the chairman with £50, and other subscriptions in the chairman's list included Messrs. Rothschild and Son, 25 guineas; N. N. Sherwood, Esq., £25; A. W. Sutton, Esq., 25 guineas; several amounts of £10 and £5 respectively, the total being £350. Covent Garden sent £104 5s., and general subscriptions amounted to £244, and the total sum reached the excellent amount of £590.

Societies.

Royal Horticultural—Drill Hall, May 7th.

Tuesday last was a grand day in London; and, saying that, it may be taken for granted that the Drill Hall Show was as crowded as it was on April 23rd. There was a grand variety, however; indeed, few of the Drill Hall meetings have been more interesting. As for the crush, that was past a joke, each person stood in the way of somebody else. The Narcissus Committee sat for the last time this season, and made a number of awards. There were some splendid new Narcissi, and no mistake. Roses were well shown by the Cants and the Pauls, while Callas, Tulips, Narcissi, Cinerarias, Japanese Maples, and hardy plants in general were numerous and very fine. The Messrs. Veitch staged a creditable display of Apples.

At three o'clock, Sir Trevor Lawrence, Bart., presented Mr. James Sweet and Mr. George Norman with the Victoria Medal of Honour in horticulture. Miss Ormerod, LL.D., and Sir G. King, K.C.E.I., were not present. Mr. R. I. Lynch, curator of Cambridge Botanical Garden; and Mr. W. B. Latham, curator of Birmingham Botanical Garden, were each the honoured recipients of a Veitch Memorial Medal. About sixty new Fellows were elected. A paper on "Alpine and Other Plants for Walls" was then read by Mr. E. H. Jenkins of Hampton Hill.

Fruit and Vegetable Committee.

Present: Geo. Bunyard, Esq. (in the chair); with Messrs. Henry Esling, Jas. Cheal, W. Bates, S. Mortimer, Alex. Dean, H. Somers Rivers, Geo. Kelf, Wm. Pope, E. Beckett, J. Jacques, James H. Veitch, M. Gleeson, A. Ward, G. Norman, Geo. Wythes, H. Balderson, J. Smith, A. H. Pearson, G. Reynolds, and W. Wilks.

Messrs. James Veitch & Sons, Ltd., Chelsea, sent up a collection of fifty dishes of Apples, all exceedingly fine. The freshest varieties were Newton Wonder, Dumelow's Seedling, Cox's Orange Pippin, Rostocher, Mère de Ménage, Barnack Beauty, Buckingham, Lane's Prince Albert, Lord Derby, Bramley's Seedling, Alfriston, D'Eclat, Baumann's Red Reinette, and Norfolk Beaufin (silver-gilt Knightian medal).

Cultural commendation to Messrs. H. Cannell & Sons, Swanley, for six boxes of Peas, King Edward VII.; to J. T. Bennett-Poë, Esq., for dish of Lemons (gardener, Mr. Downes); to A. Hargreaves Brown, Esq., M.P., for box of Strawberries, Royal Sovereign (gardener, Mr. Benjamin Greaves). Vote of thanks to Perceval Bosanquet, Esq., Pond Field, Hertford, for dish of Navel Lemons.

Floral Committee.

Present: W. Marshall, Esq. (in the chair); with Messrs. H. B. May, John Jennings, Wm. Howe, C. R. Fielder, J. Fraser, Chas. Dixon, Herbert J. Cutbush, R. C. Notcutt, Chas. E. Pearson, J. H. Fitt, H. P. Thomson, E. H. Jenkins, C. Blick, Geo. Paul, Chas. T. Drury, Rev. F. Page-Roberts, H. J. Jones, and Chas. Jeffries.

ROSES AND SHRUBS.

Messrs. Paul & Son, The Old Nurseries, Cheshunt, were strong in Roses, and had also forced hardwooded plants. Of the Roses, the H.P. named J. B. M. Camm, a good pink; H.P., Mrs. Cooker, after the Mrs. John Laing type; with the useful and very decorative new H.T. Lady Battersea, were admirable. *Pyrus Malus floribunda* was shown, and proved to the admiring bevy of visitors how bright and enlivening it is (bronze Flora medal).

Mr. John Russell, Richmond Nurseries, Richmond, Surrey, had a handsome collection of Japanese Maples. Here was *Acer roseo-marginata*, *A. palmatifidum rubrum*, *A. laciniata rubrum*, *A. dissectum*, and the variegated *Negundos* amongst other things. These Maples are splendid decorative foliage plants for the spring conservatory use.

Messrs. B. R. Cant & Sons, The Old Rose Gardens, Colchester, were exceedingly strong in pot H.P. and Tea Roses. Fisher Holmes, Marquis Litta, Mrs. S. Crawford, Duke of Wellington, Antoine Rivoire, creamy with flesh-coloured centre; Mrs. W. J. Grant, amongst others, were admired by all for their great perfection (silver-gilt Banksian medal).

Messrs. J. Laing & Sons, The Nurseries, Forest Hill, London, had a

group of Japanese Acers. *Vitis Cognetiæ* was also included. This is a splendid plant for clothing arches and pillars. The fast-growing and very showy *Sambucus plumosa aurea*, *Negundos*, &c., were conspicuous.

Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, sent up an interesting group of cut flowering shrub shoots from the open air. *Cerasus sinensis Sieboldi rosea* fl.-pl. was specially fine; as also the *Kerrias* and *Pyrus Malus floribunda*. *Spiræa prunifolia* was also conspicuous (silver Banksian medal).

Messrs. Wm. Paul & Son, Waltham Cross, Herts, staged pot and cut Roses. *Euchantress* was extra fine; as also the climbing *Niphetos* and a new climbing China Rose named *Field Marshal*. In the half-expanded state this is indeed handsome, being very strong, well formed, and of a deep glowing amaranth-crimson colour (silver Banksian medal).

Roses were sent from Messrs. Frank Cant & Co., Braiswick Nursery, Colchester. Very fine were *Souvenir d'Elise*, *Innocente Pirola*, *Star of Waltham*, *Maréchal Niel*, *Niphetos*, *Perle des Jardins*, and others (silver Banksian medal).

HARDY SPRING FLOWERS.

Messrs. Barr & Sons, King Street, Covent Garden, had an exhibit chiefly composed of Tulips, with some Daffodils. The Darwins were remarkably fine, as also were the Cottage Tulips and early flowering single and double varieties. Particularly good was *Koh-i-Noor*, deep crimson; *Ophir d'Or*, yellow; *Silver Standard*, flaked white and crimson; *Van Vondel*, a grand crimson with pink base; and *Couleur Cardinal*, scarlet crimson (silver Banksian medal).

Messrs. Thos. S. Ware, Ltd., Hale Farm Nurseries, Feltham, London, were exceedingly strong in *Primula Sieboldi* and other hardy plants. *Tulipa Picotee* was very fine, and it is a grand thing when seen at its best. *Iris Susiana*, *I. iberica*, *Tiarella cordifolia*, *Tropæolum Jaiette*, and *Mertensia pulmonarioides* were a few of the fine things shown (silver Banksian medal).

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, came forward in strength with Narcissi and Tulips. Of the latter, *Thomas Moore*; *Salvator Rosa*, a beautiful double soft rose variety; *Murillo*, another double, of a soft pink shade; with the old *Tournesol* and *Mon Tresor*, brilliant yellow, were the *élite* of the collection. *Narcissi* *Dean Herbert*, *Emperor*, *Tom Tit* (a pretty new yellow trumpet), and *Minnie Hume* were the finest (bronze Flora medal). Messrs. J. Peed and Sons, Roupell Park Nurseries, Norwood Road, S.E., staged hardy herbaceous and alpine plants, arranged in natural rockwork. All the choicest things were here.

Messrs. Geo. Jackman & Son, Woking Nursery, Surrey, staged the lovely *Phlox lilacina*, *Arnebia echioides*, *Ourissia coccinea*, a handsome crimson flowered hardy border plant, together with the pink *Oenothera speciosa rosea*. *Trollius Fortunei*, orange red, and a deep rosy pink form of *Campanula medium*, or *Canterbury Bell* (bronze Flora medal). Messrs. H. Young & Sons, Pansy Nurseries, Windmill Lane, Cheshunt, exhibited twelve boxes of Pansies, in distinct varieties, showing the usefulness of these homely flowers when massed.

A splendid group of seedling Callas (*Calla Elliottiana*) came from Lord Rothschild (gardener, Mr. Hill), Tring Park, Tring. The flowers of this group showed remarkable variations (silver-gilt Flora medal). Messrs. B. S. Williams & Son, Upper Holloway, London, N., staged stove foliage plants, with a few greenhouse flowering subjects, the whole forming a very attractive and effective group. Messrs. H. Cannell & Sons, Swanley, Kent, had *Fancy Pelargoniums* arranged in glasses. Every one was so fine that it was almost invidious to make a selection. The following may be taken as really grand: *Volonte Nationale alba*, white; *Crimson King*; Mrs. W. Hemsley, salmon pink; E. Perkins, glowing scarlet crimson; Mrs. Geo. Gordon, rose with silvery edge; and *Emmanuel Liais*, a fancy streaked pink and white sort.

Messrs. J. Carter & Co., High Holborn, sent up a large group of *Cineraria stellata*, which formed one of the features of the show. There can be no doubt about the all-round worth of this fine strain for decorative uses (silver Flora medal).

From Messrs. Storrie & Storrie, nurserymen, Dundee, came a massive collection of rich and varied Primroses and Polyanthus. The yellow and sulphur coloured hose-in-hose Polyanthi were admired by all, and created considerable interest amongst experts by reason of their distinctness. The gold, grey, and silver-laced varieties were also good. They staged six large basketsful, proving that they must have a grand selection at their Scottish nursery (bronze Flora medal). Mr. Chas. Turner, The Royal Nurseries, Slough, exhibited *Alpine Auriculas* in pots, the bulk of which represented very promising seedlings (silver Flora medal).

Irish grown Tulips came from Messrs. Hogg & Robertson of Rush, co. Dublin. The single varieties *Cramoise Pouppe*, rose; *Unique*, creamy white; *Prince of Austria*; *Admiral Reynerise*, a beautiful rosy red and white flaked variety; *Goldfinch*, yellow; *Princess Ida*, white with golden flush; and then the lovely Parrot Tulips formed quite a feature by themselves (silver Banksian medal). Mr. Percy R. Dunn, an enthusiastic amateur from Brockley Park, S.E., staged a really creditable group of herbaceous Calceolarias, for which he was awarded a bronze Banksian medal. Messrs. W. Cutbush & Son, Highgate, London, N., staged *Calla Elliottiana*, and that charming new border Carnation named *Herbert J. Cutbush*. Everyone should make a point of seeing this exceedingly strong variety (bright glowing crimson).

which is spoken of as likely to beat Premier as a popular sort (bronze Flora medal). Messrs. R. Wallace & Co., Kilnfield Gardens, Colchester, were forward with a choice collection of hardy plants (silver Banksian medal).

From Wilberforce Bryant, Esq. (gardener, Mr. D. Kemp), Stoke Park Gardens, Slough, came a handsome group of Hippeastrums grown in large pots, and each throwing up three, four, and five spikes, with an average of four large blooms each. They were really good and creditable to Mr. Kemp (silver Banksian medal). Miss Jekyll, V.M.H., set up beautiful Primulas and Polyanthi; the Director of Kew Gardens sent Hippeastrums. Mr. Amos Perry of Winchmore Hill, London, N., was strong in choice hardy flowers (silver Banksian medal). Messrs. Hugh Low & Co., Bush Hill Park, Enfield, staged Schizanthus wisetonensis in 6-inch pots beautifully flowered and highly attractive. This is a grand thing, and very useful to the gardener. Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, had a group of his finely grown, marketable Coleus, in the varieties Victor, Hector, Ayesha, Crimson Gem, Golden Gem, Decorator, and Mrs. Tolworthy. He also staged Statice profusa and Zonal Pelargoniums (silver Banksian medal).

Orchid Committee.

Present: J. G. Fowley, Esq. (in the chair); with Messrs. W. H. White, H. Little, H. A. Tracy, H. J. Chapman, W. H. Young, H. J. Howe, T. W. Bond, H. T. Pitt, F. A. Rehder, E. Ashworth, J. W. Odell, W. Cobb, Jas. Douglas, H. Ballantine, de B. Crawshay, W. A. Bilney, and W. B. Latham.

Messrs. H. Low & Co., Bush Hill Park, arranged a small group of Orchids, which included well grown plants of Cattleya Skinneri, C. Schröderæ, Oncidium Marshallianum, O. concolor, and several others. Mr. F. W. Thurgood, gardener to H. T. Pitt, Esq., Stamford Hill, sent a charming group of Odontoglossums, Cattleyas, Oncidiums, Cypripediums, and Miltonias. Mr. F. J. Thorne, gardener to Major Joicey, Sunningdale Park, Sunningdale, sent a magnificent plant of Epidendrum (Diacrium) bicornutum, carrying seven spikes.

A superb group of Orchids was arranged by J. Leemann, Esq., Westbank House, Heaton-on-Mersey. The plants were splendidly grown and magnificently flowered. Forms of Odontoglossum crispum were magnificent, as were Lælia and Cattleyas, especially C. intermedia alba, of which one plant carried five splendid flowers. Mr. W. J. Stables, gardener to de Barri Crawshay, Esq., Rosefield, Sevenoaks, sent a set of splendid Odontoglossums, including some charming forms.

The plants of Cattleya Schröderæ, in the group from Messrs. J. Veitch & Sons, Chelsea, were delightfully fragrant, and were very much admired. The collection comprised also Lælia Latona, Epidendrum elegantulum luteum, Cymbidium Lowianum, Lælia purpurata, Odontoglossums, Spathoglottis aureo Veillardii, Oncidiums, Masdevallia Veitchii, and others. Several growers contributed small exhibits of Orchids that were of much interest.

MEDALS.—Silver Flora to de B. Crawshay, Esq., Rosefield, Sevenoaks, for group of Odontoglossum; to H. T. Pitt, Esq., Rosslyn, Stamford Hill, for group of Orchids; silver-gilt Flora, Mr. Leemann, West Bank House, Heaton Mersey, for group of Orchids.

Narcissus Committee.

Present: J. T. Bennett-Poë, Esq. (in the chair); with Miss E. Willmott, Messrs. S. Eugène Bourne, G. H. Engleheart, J. D. Pearson, R. Sydenham, Chas. Wolley-Dod, S. Kingsmill, W. Poupart, S. A. de Graaff, W. T. Ware (Bath), G. Reuthe, C. Scrase Dickens, P. R. Barr, W. F. M. Copeland, and W. Goldring.

This was the last sitting of the Narcissus Committee for the season. A number of awards were made. Rev. G. H. Engleheart, Applesbaw, Andover, staged a beautiful lot of Narcissi seedlings, five of which received awards.

Certificates and Awards of Merit.

Lælio-Cattleya Mrs. Gratrix, Tring Park variety (E. Hill).—A fine variety, in which the crimson suffusions are very pronounced; the lip, too, is superb (award of merit).

Lælio-Cattleya Digbyano Mendeli, Tring Park variety (E. Hill).—A superb bigener; the petals and sepals are soft rose. The magnificent lip is beautifully fringed and coloured bluish; the throat is lemon (first-class certificate).

Cattleya Schröderæ heatonense (H. T. Pitt).—This is a most beautiful variety. The basal colour is soft rose, this extending to the fimbriations of the lip. The central portion of the lip and the throat are lemon yellow (first-class certificate).

Odontoglossum Halli Edward VII. (H. T. Pitt).—A magnificent variety. The sepals are dull brown, tipped yellowish green; the petals are similar in colour, but the green is more conspicuous. The broad fringed lip is white with chocolate spots (first-class certificate).

Brasso-Cattleya nivalis (J. Leemann).—A charming little flower, of which the colour is pale creamy white over all (award of merit).

Odontoglossum crispum confetti (J. Leemann).—One of the finest Orchids in the show. The ground colour is white with very profuse markings of bright chocolate (first-class certificate).

Odontoglossum crispum Raymond Crawshay (W. J. Stables).—A perfectly round flower. The colour is rosy white with light brown spots and blotches (award of merit).

Odontoglossum Adrianae Cobbianum (W. Cobb).—A remarkable form, in which the whole of the sepals and petals are deep crimson. The lip is yellow and crimson (first-class certificate).

Cattleya Mendeli Queen Alexandra (H. A. Tracy).—A beautiful variety. The broad sepals are soft rose, with purple rose at the tip; the petals are of similar hue. The splendid lip is maroon purple, and the throat yellow, veined crimson (award of merit).

Narcissus Elaine (Miss Willmott).—A beautiful incomparabilis. The perianth segments are very broad, paper-white in colour. The corona is cream (first class certificate).

Narcissus Amber (Miss Willmott).—A striking variety. The segments are white, and the trumpet is very rich yellow (award of merit).

Sobralia Ruckeri (W. H. White).—A very handsome flower. The colour is rich purple, and the throat creamy white (award of merit).

Narcissus Corydon (Miss Willmott).—A charming flower. The segments are white, and are thrown back over the stalk. The cup is lemon (award of merit).

Narcissus D. E. Wemyss (Miss Willmott).—A true incomparabilis. The segments are white cream, and the rich yellow crown is edged bright orange (award of merit).

Primrose Sultan (Miss Jekyll, V.M.H.).—A most magnificent plant. The flowers are borne in bunches on very stout footstalks; the colour is rich yellow (award of merit).

Odontoglossum Domino (J. Leemann).—A fine variety. The colour is white, with large and small crimson chocolate spots over the whole surface (award of merit).

Odontoglossum Countess of Derby (J. Leemann).—The ground colour of this shapely variety is rosy white, and the spots light brown (award of merit).

Narcissus Aftermath (G. H. Engleheart).—The perianth segments of this variety are rounded, as in the poeticus section. The colour is cream. The corona is orange crimson (award of merit).

Narcissus Sea Bird (G. H. Engleheart).—A chastely beautiful flower, of which the segments are pure white and the corona pure yellow (award of merit).

Narcissus Dog Star (G. H. Engleheart).—This is a fine Narcissus; the perianth segments are cream, and the flat crown pure yellow (award of merit).

Narcissus Rear Guard (G. H. Engleheart).—A distinct incomparabilis; the segments are cream, and the crown yellow (award of merit).

Narcissus Spenser (G. H. Engleheart).—A fine form of poeticus; the crown is very dark crimson (award of merit).

Auricula Leonora (C. Turner).—A fine Alpine with a white centre; the surrounding colour is violet purple (award of merit).

Tulip William III. (Barr & Sons).—A handsome double Tulip; the colour is bright crimson-scarlet (award of merit).

Tulip Brunhilde (Barr & Sons).—An early single Tulip. The colour is yellow at the base and white on the upper portions of the flower (award of merit).

Mule Pink Lady Dixon (P. D. Williams).—A fine variety of crimson rose shade (award of merit).

Borecole Albino (Storrie & Storrie).—A handsome ornamental plant, of which the white leaves are edged green (award of merit).

Bradford Horticultural.

The eighth annual exhibition of this society will be held in the Drill Hall, Peel Park Hotel, Otley Road, Bradford, on Friday and Saturday, August 30th and 31st. The schedule of prizes has now been issued. The hon. sec. is Mr. W. D. B. Pearson, Peel Park Hotel, Bradford.

Royal Meteorological Society.

At the ordinary meeting, to be held in the rooms of the Society, 70, Victoria Street, Westminster, S.W., on Wednesday, the 15th inst., at 4.30 P.M., the following papers will be read:—"The Periodicity of Cyclonic Winds," by Rupert T. Smith, F.R.Met.Soc.; and "An Account of the Bequest of the late G. J. Symons, F.R.S., to the Royal Meteorological Society," by William Marriott, F.R.Met.Soc.

Scottish Horticultural Association.

Monthly meeting held in 5, St. Andrew's Square, Edinburgh, on Tuesday evening, the 7th inst., Mr. Comfort, president, in the chair, when Mr. John Forbes, Hawick, read a very interesting paper on "The Florist and His Flowers." The paper was much appreciated, and elicited a very interesting discussion. A very warm vote of thanks was accorded to Mr. Forbes. Among exhibits on the table were a very handsome vase of Spanish Iris and Gypsophila from Mr. Todd, also a handsome plant of Myosotis robusta grandiflora, the best of spring Forget-me-nots; several trusses of Rhododendrons from Mr. Johnston, Hay Lodge. A new Cabbage, Mackinlay's Matchless, from Mr. Geo. Mackinlay, The Gardens, Wrest Park, Amptbill, was awarded a first-class certificate. Reference was made to the death of Mr. D. T. Fish, and on the motion of Mr. Todd an expression of regret was minuted, and the secretary was requested to send an excerpt of the minute to Mrs. Fish. A similar reference and expression of regret was minuted as to the death of Mr. John Thomson, Clovenfords Vineyards, and also of Mr. Mark King, who had long been a member of the association.

Royal Scottish Arboricultural.

At a meeting of conncil of this Society, held at 5, St. Andrew Square, Edinburgh, the arrangements proposed for the excursion to Ayrshire during the last week of July were explained, and it was decided that the general meeting of the Society should be held in Ayr during the excursion, instead of in Edinburgh previous to starting, as formerly. The General Purposes Committee reported the progress made in connection with the proposed forestry exhibition at the Highland Society's Show at Inverness, and a special committee was appointed to act along with a committee of the Highland Society. It was unanimously agreed to recommend that Sir Robert Menzies, Bart., be elected an honorary member of the Society at the next general meeting. It was remitted to the president, Lord Mansfield, and the honorary secretary, Mr. Munro Ferguson, M.P., to endeavour to arrange a conference in Edinburgh with Mr. Hanbury, the President of the Board of Agriculture, on the subject of forestry education.

Leeds Paxton.

Mr. Wm. Moore, The Gardens, Allerton Hall, Gledhow, Leeds, discoursed to a good number of the members of the Leeds Paxton Society on the Chrysanthemum, how to grow for exhibition being the chief point aimed at by the essayist. Mr. Moore said in his opening remarks that the southern growers recommend a great many of the up-to-date varieties to be grown on the second bud, but he did not in this district so far north, only in some few cases. A very good way of growing plants of a dwarf nature was to strike in March, pinch the late varieties latter end of May, and early varieties beginning of June; grow one bloom to a plant in 6-inch pots. The essayist said he had had some excellent exhibition flowers from such culture. Striking cuttings, first, second, and final potting, manures (organic and inorganic), housing of plants, diseases, &c., were all gone through. One thing the essayist pointed out was to be very careful with manures and feeding, as he thought more Chrysanthemums were ruined by overfeeding than anything else. A very good discussion took place, and a great many members asked questions, which were answered to the satisfaction of all. A very warm and cordial vote of thanks was accorded Mr. Moore, who suitably replied, and said he was only too pleased to try and assist any of his brother Paxtonians in this great work of growing Chrysanthemums for exhibition.—J. YEADON, Sec.

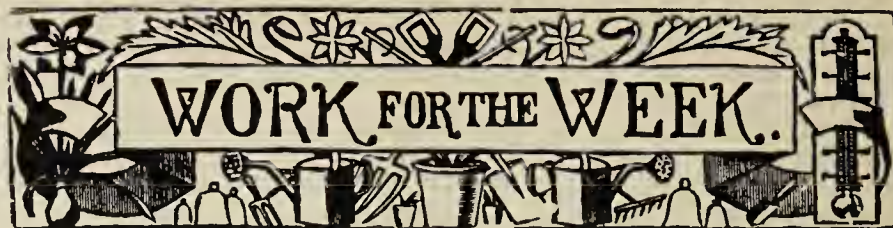
Notes on Figs Under Glass.

THE fruits of the earliest trees in pots, and of the very early small varieties, Early Violet and St. John's, are ripe, and the large White Marseilles and Brown Turkey are nearly so, hence the supply of water at the roots must be diminished, discontinuing syringing, and affording a free circulation of warm air, leaving a little top ventilation at nights. Although watering is advised to be lessened during the ripening of the fruit, the soil must be kept moist, and a moderate moisture in the atmosphere secured by an occasional damping, but this will only be necessary in very bright weather. As soon as the first crop is gathered syringe the trees twice daily, renewing the top-dressing, and water with weak liquid manure. If the second crop be very abundant the fruits must be thinned so as not to over-tax the trees for early forcing next season.

The fruit on early forced planted-out trees is advancing rapidly towards the ripening stage, and must have sufficient nutriment. If necessary give the trees a thorough supply of water or liquid manure, and mulch the border with a little partially decayed rather lumpy manure. Do not cease syringing until the fruit commences ripening, avoiding then a superfluity of moisture about the house, having a little ventilation at the top constantly, and a free circulation until the fruit is all gathered. Do not gather the fruit until it is thoroughly ripe, unless it has to be packed.

In succession houses attention must be given to stopping the shoots at the fifth joint, and subsequently to one or two; but too many side shoots must not be encouraged, as the fruits and wood require light and air for maturation. Train extensions in their full length, thinning or removing strong growths, so as to admit light and air to the fruit. Attend daily to syringing the trees, and supply water as necessary to maintain thorough moisture at the roots. Renew the mulching from time to time, and keep it moist, but not always saturated, so as to encourage the roots and keep them at the surface.—GROWER.

Horseradish.—Horseradish is a plant cultivated and used chiefly as a condiment to correct rich diet. The fresh root, says the author of "Fruits, Nuts, and Vegetables," is a strong stimulant because of its ardent and pungent volatile principle, which becomes inert by exposure and cooking. It contains sulphur, and is therefore recommended for rheumatism. Scraped and swallowed it is also good for relaxed sore throat. For neuralgia of the face, scraped and applied as a poultice, it usually gives relief. Horseradish may be bought in the form of a tincture for use in these several ailments. This vegetable chemically contains sulphur, a volatile oil, bitter resin, sugar, starch, gum, albumen, and acetates.



Fruit Forcing.

Melons.—*Early Plants.*—When the fruit commences ripening lessen the supply of water at the roots, but not so as to distress the plants, for if the foliage has been kept clean, and the roots are in good condition, a second crop may be had. Withhold atmospheric moisture, and provide a circulation of warm air, increasing the temperature to 70° or 75° artificially, and 80° to 90° with sun heat. If any fruits show a tendency to crack cut the shoots about half way through with a sharp knife, a few inches below the fruit, diminishing the supply of water at the roots and in the atmosphere, leaving a little extra ventilation constantly to prevent moisture condensing on the fruit.

Succession Plants.—When the plants are coming into flower keep the atmosphere rather drier and warmer, ventilating early, and leaving a little constantly to prevent the blossoms becoming too damp. Fertilise the flowers when fully expanded, stopping the shoots at the same time one or two joints beyond the fruit. Earth the plants with some rather strong loam after the fruits begin swelling, ramming it firmly. Plants swelling their fruits may be syringed in hot weather about 3 P.M., damping the floor several times a day, and occasionally in the evening, with weak liquid manure. Shade only to prevent flagging, ventilate freely in favourable weather, commencing from 75° to 80°, increasing during the day as may be necessary, maintaining a day temperature of 80° to 85° or 90° with sun heat, closing between 80° and 85°, and if an advance is made after closing to 90° or 95° it will materially assist the fruit swelling, but it must be accompanied by plenty of atmospheric moisture.

Train out the growths in pits and frames, still maintaining a good bottom heat by linings, and employ night coverings over the lights. Earth up the roots as they protrude through the sides of the mounds. Do not allow young plants to become root-bound before placing them out, as they rarely make free growth afterwards. Any plants that are likely to get into that state should be shifted into larger pots, but not more than a size or two bigger than those they are at present in, in order to keep them in steady progressive growth. Sow seeds for raising plants for pits or frames as they become cleared of bedding plants, potting the young plants as required. A fair amount of bottom heat should first be secured by using the less decomposed material from Rhubarb, Seakale, Vine borders, or exhausted hotbeds, which, with a fourth of fresh material, will afford all the bottom heat required.

Vines.—*Early Forced.*—Where the Grapes are ripe, fire heat will only be necessary to keep the temperature at about 60° at night, ventilating freely by day. Black Hamburgh and other thin-skinned Grapes will need slight shade, such as that of a double thickness of herring nets over the roof-lights, and it will also prevent amber-coloured Grapes assuming a brownish hue, as well as black turning reddish, detracting from their appearance. Damp the house occasionally, not allowing moisture to be condensed on the berries, but prevent it by a little ventilation constantly, and insure its dissipation by increasing the amount early. A certain extent of air moisture is necessary for the foliage, and will not injure the Grapes provided the atmosphere is not stagnant. A moderate extension of the laterals is advisable, as it tends to keep the roots active and prevents the premature ripening of the foliage, which must be kept clean and healthy as long as possible. If the principal leaves fall a prey to red spider, and there are no laterals to utilise the sap, it is probable that the axillary buds will be started prematurely. If fermenting materials have been applied to the border, part of them should now be removed, leaving sufficient for a mulch; and if the roots are active in the lower part of the material a little fresh may be placed on the surface to protect them from the atmosphere and impart a neat appearance.

Early Muscats.—It is hardly possible, and certainly not desirable, to have Muscat of Alexandria ripe before June. Black Muscat (Muscat Hamburgh) may be ripened by the end of April, but it sets its berries very indifferently at an early season, and fertilisation makes very little difference, as the pistillate parts of the flowers are often devoid of ovules, and cannot possibly be set. Madresfield Court cannot be classed as a Muscat in the same sense as a Muscat of Alexandria, but it forces admirably, and has some Muscat flavour. Crops of Muscat of Alexandria started in December are now ripening, and the Vines must not lack water at the roots. Examine the inside border every week, and if moisture be necessary give it, or liquid manure, liberally and warm. The temperature should be kept at 65° to 70° at night, 70° to 75° by day artificially, and through the day at 80° to 90° from sun heat. A circulation of air should be kept constantly, warm and rather dry air being necessary to perfection in Muscats. If the sun is very powerful, and the panes of glass large and clear, a single thickness of herring nets drawn over the roof-lights will break the force of the rays

preventing scorching of the leaves and berries, which is often occasioned by the deposition of moisture on them, and the latter is a common cause of spot.

Vines Started at the New Year.—The Grapes are colouring and need a moderate amount of air moisture to swell well, damping the house two or three times a day until the colouring approaches completion, when a drier atmosphere will be advisable; but moisture must not be entirely withdrawn, or red spider will seriously damage the foliage, and premature ripening of the leaves be induced, the Vines starting into growth when they should be going to rest. Afford free ventilation, having a little at the top of the house constantly; a circulation of warm air contributes to good finish and quality. Moisture at the roots must be furnished thoroughly, one good soaking of tepid liquid when the Grapes change colour, and a mulch of partially decayed manure, will generally secure sufficient moisture until the Grapes are ripe. The roots, however, must not lack moisture. Atmospheric moisture will not injure Grapes of this class (Hamburgh and Sweetwater) at this time of year, provided it is not stagnant and deposited on the berries, and this will not occur if the ventilation is properly attended to and a gentle warmth is maintained in the hot-water pipes. Keep the night temperature at 65°, a little more in warm, and a few degrees less on cold nights, 70° to 75° by day, 80° to 90° with sun heat and full ventilation, closing at 80° all but a small space at the top of the house.

Succession Houses.—The sun is an important factor in keeping down the bill for fuel. There is nothing like opening the ventilators early in the morning, admitting air in a safe quantity to pass through the house. It causes excessive moisture to disappear, allows the foliage and fruit to warm equally with the atmosphere, preventing scorching, while elaboration begins early, and is continued throughout the day. By closing early the Grapes are accelerated in swelling provided there is a due supply of atmospheric moisture, which can be secured by damping the paths and borders at closing time. Before nightfall admit a little air at the top of the house. This chink for air saves Vines from scorching when the air-giver is not up early on sunny mornings, but the ventilation should be increased by the time the sun acts powerfully upon the house. Thinning the berries must be attended to, and followed up persistently. The morning and evening is the best time for operating, alike to cultivator and the Grapes. Remove all surplus bunches.

Stop or remove laterals not required, letting those retained extend where space permits. Do not crowd the foliage, and never allow the laterals to interfere with the principal leaves, as these, to feed the buds at their base, require free exposure to light and air. Supply water or liquid manure to the borders liberally when needed, and encourage surface roots with top-dressings of superphosphate, fishmeal, and blood manure. It is a good plan to mix all together, with as much of the whole added of wood ashes, and sprinkle a handful (about 4 ozs.) on each square yard, washing in. Sulphate of ammonia assists Vines needing vigour. Nitrate of soda may be used where the soil is sandy or chalky, and nitrate of potash where that substance is deficient, an ounce per square yard being sufficient for one dressing. The night temperature should be kept at 60° to 65°, 70° to 75° by day, and 80° to 90° from sun heat.

Late Vines.—These are advanced for flowering, and the early started may be in bloom. When in flower allow a night temperature of 70°, and 80° by day, with a free circulation of air, but not a drying current, a genial atmosphere being maintained by damping the paths and borders. Brush the shy-setting varieties over with a camel's-hair brush, and fertilise the bunches carefully where there is a deficiency of pollen, taking it from those that afford it freely. Up to and after flowering the night temperature should be kept at 65°, 70° to 75° by day artificially, keeping at 80° to 85° or 90° through the day, with moderate ventilation in bright weather, and admit air when mild. Thin the bunches and berries, removing duplicate bunches unflinchingly, and reserve the most compact. The free-setting varieties should be commenced with first, leaving the shy-setting kinds until it can be seen which are the properly fertilised berries, by their taking the lead in swelling. Forward Vines that have only recently been started, seeking advancement by sun heat, but allow a free circulation of air, so as to insure sturdy growth and stout foliage.

The Kitchen Garden.

Cucumbers in Frames.—Cucumbers grow very freely in frames planted on a good bed of soil over a compact bed of fermenting manure and leaves. Horse manure and partially decayed leaves may be thrown together in a heap, freely shaking out the materials in the process, and mixing all well together. The mixture will be better for turning again and mixing, but this is not so essential now in the formation of a hot-bed as earlier in the season. Place in a brick frame, and tread it down in layers as introduced. Nearly fill the frame, as it will gradually subside. Cover the whole surface with a layer of good soil, which will keep down the gases from the manure. Under the centre of each light form a mound of soil, first placing an upturned turf sod, which will arrest any fierce heat. The compost should be turfy loam, leaf soil, and manure. When the mounds have become warmed through, plant one young Cucumber on each. Syringe daily, shutting up the frame early. If very hot and sunny, give slight shade during midday. Growth will soon be rapid, and young shoots will appear on the surface; then give

a top-dressing of soil to cover these up, and furnish a good rooting medium. Encourage main growths to cover the bed, stopping when they reach the base. Side shoots then push, on which the fruit forms. Stop them one joint beyond the fruit. The after culture consists in thinning out and regulating these growths as necessary. When growing freely, water must be given copiously to sustain growth, affording it in the afternoon at the time of closing.

Vegetable Marrows.—Strong plants raised in pots and duly hardened may be planted in good soil in the open ground in a sunny position, or on mounds of soil on heaps of decayed vegetable matter or leaves. In either case some slight protection should be given during cold nights, which may yet be expected. The plants, if not making much growth for a time, will be establishing themselves, soon advancing rapidly when warm weather sets in. This is also a suitable time to sow seed, placing about a gallon of rich, light soil for the seed to germinate in. The positions may be 6 feet apart.

Tomatoes.—A further lot of plants may be potted or planted out under glass, the present being a good time to furnish unheated houses with strong plants. Grow them in beds on the floor of the house, the roof being unshaded, or in pots, boxes, or shallow borders. Plants established in slightly heated houses are growing freely. Keep the stems tied to the supports or wires, and rub out the side shoots from the axils of leaves. Where well rooted, and having set one or two bunches of fruit, a top-dressing of rich material may be given. This should consist of loam, manure, wood ashes, and bone-meal. Give about an inch, and press down firmly. Tomatoes must be kept moist at the roots, and should receive frequent attention, especially in hot, sunny weather.

Dwarf and Runner Beans.—Successional sowings of these should be made if the quantity already in the soil is not sufficient. Thin the early rows of Dwarf French Beans to a distance of 9 or 10 inches between each plant. Prepare the sticks or poles in readiness for staking the Runner varieties. Seed sown in a box in a frame will furnish strong plants to place out when the weather is safe, or to fill up vacancies in the rows of seedlings.

Onions.—Lightly hoe between the rows, and give a dusting of soot, which is beneficial in accelerating growth and carrying the plants beyond the time when the Onion fly may attack them.

Spinach.—Spinach may be thinned for use. This will give the plants remaining more room and a chance of forming larger leaves, which are appreciated. If necessary sow more seed in drills on rich ground. Long Standing Round and Victoria Spinach are good varieties. New Zealand Spinach may be sown in the open now.

Cauliflowers.—Early Cauliflowers raised from seed and strengthened in boxes may be planted out now in rich soil a foot apart in rows 2 feet asunder.

Brussels Sprouts.—Early plants of these are now strong and hardy enough to plant out. A space of 2½ feet between the rows should be provided, the distance between the plants 15 to 18 inches. Prick out seedlings from the outdoor sowings 6 inches apart. These will be ready to plant finally in June.

Lettuce.—The thinnings from rows of Cos and Cabbage Lettuce may be planted out in vacant positions between Peas, Beans, or on Celery ridges; water until established. Sow seeds in drills half an inch deep. Rich moist ground suits Lettuce best; in dry positions it quickly runs to seed.

Phenological Observations.

MAY 9TH TO 16TH.		PLANTS DEDICATED TO EACH DAY.
10 Fri.	Daddy long-legs appears.	Fine-leaved Pæonia.
11 Sat.	Reed bunting lays.	Yellow Asphodel.
12 Sun.	Lily of Valley flowers.	German Iris.
13 Mon.	Swift appears.	Common Comfrey.
14 Tu.	Dot moth appears.	Eastern Poppy (P. orientalis).
15 Wed.	Hawthorn flowers.	Common Pæonia.
16 Thr.	Spotted fly-catcher appears.	Large Star of Bethlehem.

Next Week's Events.

Monday, May 13th.—United Horticultural Benevolent and Providential Society Committees' meeting.
Thursday, May 16th.—Royal Botanical Society meeting; Woking Horticultural Society meets, lecture on "Ferns."

Gardeners' Provident and Charitable Institutions.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—Secretary, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—Secretary, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—Secretary, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.



All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Chinese Sacred Lily (Grower).—The bulbs are too cheap for anyone to waste time and all else in propagating them in their home gardens. You may very well plant the bulbs in the warmest out-of-doors border you have, whence they will do fairly well. Yes, *Ornithogalum arabicum* succeeds in open-air borders.

Parts of a Daffodil (Henry Bale).—The parts of a Daffodil flower could only be adequately pointed out by the use of a diagram, and here we have one. No. 1 is the scape or hollow flower stalk; 2, the papier maché-like spathe which envelope and protect the flower when in bud; 3, the ovary which contains the seeds. The fact of the ovary being below the floral leaves or segments is a characteristic which marks the Amaryllidaceous plants from those of the natural order Liliaceæ. No. 4 is the tube of the flower; 5, the perianth composed of six segments; and 6, the corona or trumpet. These parts are to be found in all *Narcissi*, although, of course, in different proportions. The flower in the illustration is a true Daffodil or trumpet *Narcissus*. The name Daffodil is more frequently employed than *Narcissus*, because it sounds more homely and musical to our English hearing. They are all *Narcissi* (singular, *Narcissus*), however, though all *Narcissi* are not Daffodils. Only those *Narcissi* with trumpets longer than the length of the perianth segments are properly Daffodils. The medio-coronati, that is, the *Narcissi* with a trumpet half as long as the perianth segments, are classified only as *Narcissi*, and would not strictly receive the name of Daffodil. But the subject is one you will require to study more fully before you are acquainted with all the types and forms.

Lilium Harrisii Unhealthy (B. R.).—This species is frequently a prey to troublous maladies. It would seem as though you have been a little too free in supplying manures or fertilisers. These are essential if healthy and robust plants are desired, but never forget the golden rule which says, Weak and often. The latter stipulation requires to be qualified, for inasmuch as the soil in the pots was not thoroughly ramified through when feeding seems to have been started, to give even weak liquid manure was bad practice, and uncalled for. Use clear water, see that drainage is correct, and allow the soil to become well drained, not to say dry, before giving further water. The top soil might even be removed.

Planting Furze on the Brow of a Hill (One Desirous).—Instead of going to the expense of planting young Furze plants we would suggest that you wait till the end of July, and, having prepared a good surface tilth, sow seeds broadcast. They will germinate and grow half a foot before winter, and next year they will entirely clothe the bank. If you had seeds just now it would be legitimate to sow them at once. Keep the plants weeded throughout the summer. A poor, porous soil and exposed position suits the Furze.

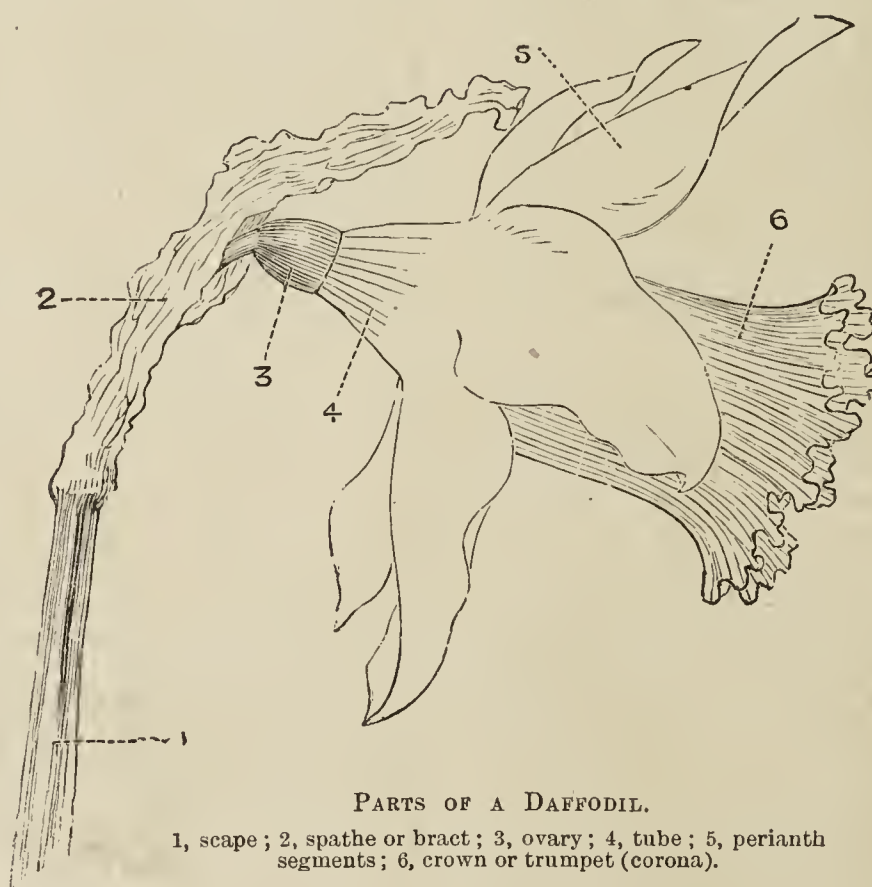
Book on Fruit Growing (A. B.).—As a small introductory book of reliability we would commend "Profitable Fruit Growing," price 1s. 3d. post free. Much valuable information will also be obtained from "Fruit Farming for Profit," which is written by Mr. Geo. Bunyard in his most readable style. The price of the latter book is 2s. 9d. post free; and both the books can be obtained from the office of the Journal, 12, Mitre Court Chambers, Fleet Street, E.C. Regarding Vines, there is no better book than that of Mr. Barron's, entitled "Vines and Vine Culture," 5s. 3d. post free.

Deutzias after Flowering (Abel Young).—Cut back as much of the old woody shoots as is needful to allow light and freedom of air to play upon the young growths, and have an eye to symmetry when pruning. Deutzias may be plunged by the shelter of a wall, on the shady side, and left out all summer. They should receive abundance of weak liquid manure, but they do not often require repotting.

Fuchsia corymbiflora (One Desirous).—Three-year-old seedlings ought to flower this autumn. It is a shy bloomer under ordinary circumstances. The most effective form is to make plants of it into half-standards, with naked stems 3 or 4 feet long; to prune their heads as close as a *Pelargonium* before they go to rest in the autumn; not to shake the soil from the roots like other Fuchsias in the spring, but only once in three or four years; to have them in smaller pots than are generally used, and when they show for bloom to give them abundance of rain water; they never want stimulants.

Seedling Tree Carnations (Aberdeenshire).—The young plants should now be potted off separately into 3-inch pots. A compost of about equal parts of leaf mould (from Beech leaves if possible), yellow loam, and coarse silver or seashore sand suits them. Grow them either in a special pit suited for them, or on greenhouse shelves, till July. Another potting may then be necessary, this time into the 5-inch size. Syringe the plants morning and evening, shade from bright sun, keep as cool as possible, and stake the leading and side growths before these become too straggly. From July till toward the end of September is a period when the plants will bear the greatest amount of open-air treatment. As they will flower toward the end of the year, every attention should be laboured upon them, so as to obtain firm stocky plants. Liquid manure may be applied weakly at intervals of a few days from September onwards, when they will be placed in the greenhouse.

Diseased Tulips (Harborne).—The bulbs are affected by the Tulip mould (*Sclerotinia parasitica*), which often kills them by setting up decay at the neck, and, the central part thus infected, putrefaction rapidly proceeds downwards in the bulb, being accelerated by the action of bacteria. The white mould corresponds to the external mycelial hyphæ and conidial stage of the fungus, and is known to mycologists as *Botrytis parasitica*. This produces innumerable conidia or summer spores, which, carried by wind and rain, inoculate other plants in the vicinity. The parasite attacks the stem or crown of the bulb, and the plant collapses in the early stages of growth, or sometimes the young growth is destroyed in the ground, not any appearing, while in other cases healthy-looking plants, some time



PARTS OF A DAFFODIL.

1, scape; 2, spathe or bract; 3, ovary; 4, tube; 5, perianth segments; 6, crown or trumpet (corona).

before, or at flowering period, suddenly become limp, the stem or foliage droops, and within a few days the plant dies. In addition to the white mould the fungus forms olive-brown, minute, velvety patches on the stem, leaves, and even flowers. At a later stage, smooth, lentil-shaped sclerotia, at first grey, then black, appear, mostly in the outer parts of the bulb, sometimes being so numerous as to form black crusts. As regards preventive means, when the mould is observed, failing plants noticed, or bulbs not sending up growths, the plant should be taken up and burned to prevent the formation of the sclerotia, or resting bodies, some of which are often formed in the soil close to the bulb. Cultivators have observed that the application of rather fresh manure, or of only partially decayed leaf mould, both as manure and mixed with the soil, and as a top-dressing, causes Tulips and other plants to become diseased, and this is undoubtedly true. The manure, even if it does not contain spores, affords a congenial matrix for spores and sclerotia present in the ground, in which they reproduce themselves rapidly, and in the spring, when the young stems push through the manure or leaf mould, inoculation is almost certain to take place. Where the disease has previously existed the ground should be given a good dressing of lime, half cwt. per rod, or 1 lb. per square yard, placing in small heaps convenient for spreading, and slaking with the smallest amount of water necessary to cause it to fall into an apparently dry powder, spreading evenly whilst hot, and leaving on the surface for a few days before digging in. This should be done with a fork, taking small spits, so as to mix well with the soil to a depth of about 6 inches. A dry time should be chosen for applying the lime, and the dressing given some time in advance of planting the bulbs. A wet subsoil would tend to favour the liability of the plants to take the disease, but really would not cause the bulbs to fail, as the germs of the disease are absolutely

essential for infection. This effected, then the damp occasioned by the wet subsoil would facilitate the fungoid growth, and also accelerate the decay of the bulbs, through the moisture present and needful for putrefaction, or induced or promoted by bacterial influence. Sometimes the disease already exists in the bulbs when received, and only moisture or planting of the bulbs is needful for its development, or rather that of the parasite. This attack is almost invariably at the neck or top of the bulb, hence this rots inside and the growth is destroyed.

Pitcher Plant (Pitcher).—A Pitcher Plant (*Nepenthes*) does not count as a flowering plant for exhibition.

Agency (H. & Son, Guernsey).—Your business will receive our early attention.

English Arboricultural Society.—The address is Mr. J. Davidson, Estate Office, Haydon Bridge, Northumberland.

Primula Marie Crousse (Totnes).—We believe your variety to be the true Marie Crousse, and the other is probably a sport from it.

Cow Parsley (F. Jones).—The plant you name is more generally known under the English name of *Cow Parsnip*; and botanically as *Heracleum giganteum*. We have exterminated the plant by the simple process you suggest, that is, cutting down the plants before they can seed. It is, however, a handsome shrubby plant.

Strawberry-Raspberry (F. Jones).—The plant is of Japanese origin, and has handsome enough fruits, good for jam-making we believe. It is a true cross. Most of the large fruit growers or nurserymen in general catalogue and describe this novelty. If you wish a particular address to whom to write, we can supply you; but we do not care to specialise any particular firm.

Greengage Tomato (E. A. P.).—This variety was raised somewhere approaching twenty years ago by Messrs. Carter & Co. It is of fair good flavour, but think nothing more of the Greengage flavour. Tastes differ, and the colour of Tomatoes is no strict criterion to their eating qualities. Personally, we like the little yellow Golden Nugget sent out by the Reading firm. Tomatoes are health-giving fruits to eat, though a taste has generally to be acquired. Much of the foreign stuff is certainly insipid.

Paris Green (J. F.).—Yes, this article is sold as Emerald green, Paris green, and Schweinfurth green, and are different names for the same thing. The first name is English, and is the one used in most of our colonies, India, and China; the second is the American term; the third only used in Germany, and by German traders. It is a double salt of arsenite and copper; in other words, an aceto-arsenite of copper, and has the following composition:—

Copper	32.11 per cent.
Arsenic	28.56 "
Oxygen	32.48 "
Hydrogen	0.76 "
Carbon	6.09 "

100.000

Paris green is a dangerous poison, and should be kept out of the way of children and careless persons. Workers with the powder should not allow it to settle in any pore or crack in the skin of the hands, nor stir it about unnecessarily with the hands, and they should be very careful not to breathe in the powder through mouth or nose whilst measuring or mixing it. For this reason Paris green is prepared and sold in paste form, and any chemist should be able to supply the article in powder or paste to order, or may be had from the manufacturers, Messrs. Blundell and Spence, Hull.

Names of Fruit (Allan Reid).—1, Golden Knob; 2, Claygate Pearmain; 3, Brownlee's Russet.

Names of Plants (J. R. S.).—1, *Epimedium rubrum*; 2, *E. sulphurea*; 3, *Sanguinaria canadensis*, the American Blood-root, very beautiful. (A. F.).—1, *Mertensia pulmonarioides*; 2, *Arnebia echioides*; 3, *Pulmonaria officinalis*; 4, *P. o. alba*. (*Arthur Beggs*).—*Primula rosea grandiflora*, one of the finest of early spring flowers. (B. A.).—1, *Cardamine pinnata*, also named *Dentaria digitata* in some nurseries and gardens; 2, *Erysimum nanum* var. *Golden Gem*. (F.).—1, *Berberis Darwini*; 2, *Scilla italica*; 3, *Ranunculus aconitifolius*; 4, *Amelanchier canadensis*. (G. H. R.).—1, *Collinsia bicolor*; 2, *Adiantum tenerum*. (W. Morris).—1, *Kerria japonica* fl.pl.; 2, *Acalypha Macafeeana*; 3, *Gardenia citriodora*. (A. B., Glasgow).—*Amelanchier canadensis*. (A. B.).—By post. (A. P.).—1, *Saxifraga cordifolia*; 2, *Spiraea prunifolia* fl.pl.; 3, *Dicentra eximia*; 4, *Arabis albida*.

Covent Garden Market.—May 8th.

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz. ...	12	0 to 18	0	Crotons, doz. ...	18 0 to 30 0
Acers, doz. ...	12	0	24 0	Cyclamen, doz. ...	8 0 10 0
Aralias, doz. ...	5	0	12 0	Dracæna, var., doz. ...	12 0 30 0
Araucaria, doz. ...	21	0	30 0	Dracæna, viridis, doz. ...	9 0 18 0
Aspidistra, doz. ...	18	0	36 0	Erica, various, doz. ...	8 0 18 0
Aspidistra, specimen ...	15	0	20 0	Euonymus, var., doz. ...	6 0 18 0
Azaleas, various, each ...	2	6	5 0	Evergreens, var., doz. ...	4 0 18 0
Boronias, doz. ...	20	0	24 0	Ferns, var., doz. ...	4 0 18 0
Cinerarias, doz. ...	6	0	8 0		

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums, doz.	1	6 to 2	6	Maidenhair Fern, dozen	
Asparagus, Fern, bunch	1	6	2	bnchs.	4 0 to 6 0
Azalea, doz. bnchs. ...	4	0	5	Marguerites, white, doz.	
Camellias, white, doz. ...	2	6	0	bnches	3 0 4 0
Carnations, 12 blooms ...	1	6	2	„ yellow, doz. bnchs.	2 0 3 0
Cattleyas, doz.	10	0	12	Narcissus Ornatus, doz.	1 0 1 6
Daffodils, doz. bnchs. ...	1	0	2	Odontoglossums	3 0 4 0
Eucharis, doz.	2	0	0	Roses, Niphotos, white,	
Freesia, doz. bnchs. ...	1	6	2	doz.	1 0 2 0
Gardenias, doz.	2	0	3	„ yellow, doz. (Perles)...	2 0 0 0
Geranium, scarlet, doz.				„ red, doz.	2 0 0 0
bnches	4	0	6	„ Catherine Mermet, doz.	2 0 4 0
Hyacinths, doz. bnchs. ...	8	0	0	Smilax, bunch	3 0 4 0
Lilium lancifolium album	2	0	3	Spiræa, doz. bnchs.	4 0 6 0
„ „ rubrum	3	0	5	Stock, white, doz. bnchs.	2 0 2 6
„ „ longiflorum	2	0	3	Tulips, white, doz. bnchs.	10 0 12 0
Lilac, white, bunch, ...	3	0	0	„ red	6 0 8 0
Lily of the Valley, 12 bnchs.	8	0	12	Violets, single, doz. bnchs.	0 9 1 0
Mignonette, English, doz.	6	0	9	„ double, doz. bnchs	1 6 2 6

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, cooking, bush. ...	5	0 to 7	0	Oranges, case	15 0 to 25 0
„ Tasmanian, case	12	0	15 0	Pears, ½ case	9 0 10 0
Cobnuts, doz. lb., best ...	6	0	0 0	Pines, St. Michael's, each	2 6 4 6
Grapes, Hamburgh, lb. ...	4	6	5 0	Strawberries, lb.	3 0 5 0
Lemons, Messinas, case	9	0	12 0		

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.	
Artichokes, green, doz. ...	2	0 to 3	0	Leeks, bunch	0 1 ¹ / ₂ to 0 2	
„ Jerusalem, sieve	1	6	0	Lettuce, doz. French ...	1 0	1 4
Asparagus (Spruce Grass)	0	0	10	Mushrooms, forced, lb. ...	0 8	0 9
„ English, 100 ...	8	0	9	Mustard and Cress, pnnt.	0 2	0 0
„ Giant, bundle ...	15	0	20	Onions, Dutch, bag ...	5 0	0 0
„ Spanish, bundle.	1	9	2	„ English, cwt. ...	5 0	0 0
„ Paris Green ...	6	0	8	Parsley, doz. bnchs. ...	2 0	3 0
Batavia, doz	2	0	0	Potatoes, cwt.	3 0	7 0
Beans, French, lb. ...	1	0	1	„ New Jersey, lb	0 5	0 6
„ Jersey, lb. ...	1	3	1	Radishes, doz	0 9	1 0
Beet, red, doz.	0	6	0	Rhubarb, doz.	1 0	1 3
Broccoli, bush....	0	0	1	Savoys, tally	4 0	5 0
Cabbages, tally ...	3	0	5	Scotch Kale, bushel ...	0 6	1 0
Carrots, doz. bnch....	2	0	3	Seakale, best, doz. ...	14 0	16 0
Cauliflowers, doz. ...	1	0	2	„ 2nd, doz.	6 0	8 0
Chicory, Belgian, lb ...	0	4	0	Shallots, lb.	0 4	0 0
Corn Salad, strike ...	1	0	1	Spinach, bush.	4 0	5 0
Cucumbers, doz. ...	2	6	4	Tomatoes, Canary, case	4 0	4 6
Endive, doz	1	3	2	„ English, lb. ...	1 0	1 3
Greens, bush.	1	0	1	Turnips, doz.	2 0	3 0
Herbs, bunch	0	2	0	Turnip tops	0 9	1 0
Horseradish, bnch....	1	2	1	Watercress, doz ...	0 6	0 8



The Profit from a Flock of Sheep.

WE suppose that about half the agricultural area of this country is composed of mixed farms, i.e., of farms in which the arable portion forms an appreciable part. Taking the average produce of the various white crops, as published in the yearly averages, and reckoning their value at the average prices of the last ten years, we arrive, roughly speaking, at a money return of £5 for each acre of Corn produced, leaving the straw out of calculation. We venture to assert that, even under the most favourable conditions as to rent and tenure, labour, &c., an acre of Corn cannot be produced for less than £5. Where, then, does the farmer get his living from? We know that large numbers have failed, or given farming up in despair; yet thousands of others, though grumbling about bad times, still manage to keep their heads above water. Of course there are a few districts, but very restricted in area, where, on account of the natural fertility of the soil, Wheat and Barley will yet show a profit at 25s. per quarter; but how about those other extensive districts, where the grain produce is below rather than above the national average? It must be something other than grain which helps to make the mare go in these less favoured parts. We know that the growth of Potatoes, much more general than it used to be, has been a very useful help, where the soil is suitable to the crop. The growth of Carrots on light sands, and Celery on black peat, have also been much extended, with, on the whole, beneficial results to the cultivator. But there is still that large proportion of the arable land of this country which is either too strong or too thin, too cold or too dry, for these aids to profitable culture.

Where Corn and stock are still the only resources of the farmer, and the former is being grown at cost price, or worse, it is obvious that the profit, if any, must come from the stock; and it is fairly certain that the sheep is the most profitable animal. There is to be found, here and there, a man who is a naturally good judge of a horse, and has a happy knack of producing the best. These men make a good thing by breeding Shires or Hackneys; but it is hardly farming, for the same thing may be done by a man who occupies a few acres only, and who cannot, with truth, be classed as a farmer.

Sheep, especially the breeding of sheep, we believe to be the most sure and unfailing source of income to the occupier of a mixed farm. Next to this, the breeding and rearing of cattle, for sale at two years of age to the grazier, is the best way of realising the by-products of the farm, viz., straw and chaff, and bringing a certain considerable addition to the credit side of the balance-sheet. Sheep breed more regularly than cattle, and come to the butcher in half the time; they consume rather less food in proportion to their value, and cost much less in attendance during the winter season. Though the flock is so mixed up with the general work of the farm that it may be thought difficult to arrive at its exact cost in food and labour, yet an estimate, sufficiently near for practical purposes, may be formed. For instance, taking a farm of 500 acres, 400 arable, under the four-course system, there will be 100 acres of seeds for pasture. Of course, if a portion be required for mowing it does not affect the calculation we are about to make. With rent at 20s. per acre, and rates 2s. 6d., small seeds, sowing, harrowing, and rolling 15s., we have the cost of an acre of new seeds at 37s. 6d.

To stock 100 acres of average seeds, we shall require 250 ewes and their lambs. To have 250 ewes running with lambs at Mayday we must put 280 to the ram. Of these about fifteen will be barren, lose their lambs, or be incapable of suckling their young, so will be fed off, and make probably their prime cost; fifteen will have succumbed to the usual fatalities incidental to maternity or other ailments or accidents; the offal account will redeem about five, leaving say ten a dead loss. These 250 ewes which have successfully weathered the storm will have done badly if they have not 300 lambs at foot, and with proper management 280 at least should be ready for the butcher at twelve months old. What will these sheep require in the way of food until they are ready for sale, apart from the 100 acres of seeds? The 280 ewes, from going to the ram in October to turning out on new seeds, will consume about 30 acres of Turnips, or their equivalent in Mangold. The hoggets after weaning, besides their regular pasture, will want about 5 acres of Cabbage, or 50 acres of aftermath or fog, and about 45 acres of Turnips and Swedes during the winter. Cake and Corn will average about one-third pound per head for 280 head the year round, say 6 stone per day at 9d. per stone, about £80 per annum. During the summer the ewes may only require a quarter of a pound per head per diem, or less, and the lambs a similar quantity after weaning until Christmas, but 1 lb. per head for the latter from Christmas to clip day, and the ewes having a bit as well, will fully make up the average. Shepherd's wages, £50; help in the Turnip fold, £20; fencing, £10; carting and sundries, £10, make nearly another £100 to debit the account with.

100 acres of seeds at 37s. 6d.	£187 10 0
75 acres of Turnips at £3	225 0 0
5 acres Cabbages, or 50 acres Fog	30 0 0
Cake	80 0 0
Shepherd, &c.	90 0 0
	£612 10 0

We have reckoned the Turnips at £3, as that is the average price for those sold by auction in this neighbourhood, without using cake, the roots to be consumed on the land, so we must deduct one-third value of the cake as being the manurial value—viz., £26 13s. 4d., leaving £585 16s. 8d. as being the cost of bringing up and feeding 250 shearing sheep.

These sheep having been run thinly and well done, should realise 50s. per head in the wool—£625, to which must be added £80, value of the wool from the ewes, making a total of £705, and showing a profit of £120 16s. 8d. It will be noticed that no allowance has been made for the ten ewes lost, but they will be accounted for in this way. The flock would be self-supporting; seventy gimmer hoggs being added to stock each Lady Day, their value, minus amount realised by their wool, should be well recouped by the sixty cull ewes sold off fat. The seventy-five acres of Turnips would easily carry the latter, in addition to the younger sheep, and we included them in our calculations, as also we did the summer keep of the gimmers when reckoning what the seeds would carry.

The example we have put before our readers has been purposely made of rather an unfavourable character; in fact we have based the figures on a high level of expenditure and a very moderate estimate of returns. As a fact, 100 acres of fair seeds should carry thirty more ewes than we have reckoned, as well as the seventy gimmers, and few sheep farmers would be satisfied with less than one hogg

per ewe put to the ram. We frequently hear of an average of four lambs to three ewes running on seeds, and on many farms such an average is the rule rather than the exception. It is quite possible then, that with twenty more ewes, or 270 instead of 250, and a good crop of lambs, 360 of the latter may be weaned, and, with good fortune afterwards, 350 may be the saleable number instead of 250. With such a number, £60 more would be required to pay for Turnips and cake, and £10 for labour. If the extra 100 be valued as culls at 40s. each, there is yet an increase of the balance-sheet to the extent of £130, and an annual profit of £255 instead of £125. These are all imaginary figures, but they are based on actual facts and practical experience. £100 per annum for labour and expenses is well above the mark, for the shepherd is generally able to help a little during harvest. No account is taken of this. Then, again, he generally has to shepherd the cattle at grass and give cake to those which are being fed, so that properly a portion of his summer wages, say 6s. per week, should be charged to the cattle.

Work on the Home Farm.

The beautiful weather which so delighted us last week was too good to last, and very soon changed to cold, easterly winds, with showers of hail and sleet. Fortunately there was no actual frost, though on one or two nights the thermometer reading must have been well below 40°, and, although the cold winds began to affect the colour of the young Barley, we have again a change of wind to the west, with rain, and a rise of the temperature as well as of spirits.

The slight check has been even useful in one respect—i.e., in calling attention to the low standard of fertility of certain plots, fields, or parts of fields. An order for top-dressings has been urgently despatched, and the manure should be on the land in a few days. Had the growing weather continued the necessity for this help might not have been understood until it was too late in the season, or in the life of the crop, for the full benefit to be obtained.

It will soon be time to think of washing and clipping the ewes; they are in good condition, much better than usual at this season, and they will require very careful shepherding until the wool is off. There will also be keen satisfaction in the mind of the shepherd when they and the lambs have all been well branded with the usual letter, for a new occupier of a neighbouring holding has brought with him such a heterogeneous assortment of stock that it is more highly important than usual that we should know our own. We shall probably have some visitors in our fresh pastures, for some of his sheep look like following a hare anywhere when the wool is off. As long as he does not import infectious disease we shall deem ourselves fortunate. But, oh! why is not dipping made compulsory?

The last Barley has been put in, but not in a very satisfactory manner; the land dried so rapidly that the roll did not act as effectively as it should have done, and the land is still very knotty. It has again to be rolled, and the small seeds harrowed in. What it really wants is another good day's rain immediately. The Mangold seed is yet in the bags, but will, we hope, be germinating in the ground when next we write. We like to steep the seed before drilling it, but care must be taken that it does not get really dry again, or the husk will be so hard that the seed cannot penetrate it.

The Cabbage Crop.—Dr. Gillespie, the well-known and popular clergyman agriculturist, recently wrote to the "Dumfries Courier" on the prospects of the Cabbage crop. He said that farmers are beginning to prepare for the Cabbage crop, which has been gradually growing in favour, not only for dairy cows, but for other kinds of cattle, and also for sheep. Fortunately the plants are at once plentiful, good, and cheap this season. They are being offered by leading growers at 1s. 9d. per 1000, or 12s. 6d. per 10,000, which is a substantial reduction on what has been paid in some years. It is a wise plan to plant a proportion of Early Yorks or other early sort. These are ready for consumption much earlier than the Drumheads or other late varieties, and come in very opportunely for any kind of stock which it is desired to push forward in condition before the Turnip crop is sufficiently grown and matured to be ready for consumption. People are apt to refrain from planting the early sorts, on the ground that the yield per acre from them is less than from the Drumheads; but if the early kind is planted correspondingly close in the drills in proportion to their size, the relative deficiency in weight is comparatively small, and it is more than made up by having them available for consumption when the grass begins to fail, and special kinds of live stock are needing a little supplemental green food. The sooner in the season the produce of the green-crop land is available for consumption the better. On not a few farms there are more Turnips this spring than the farmers know very well how to get consumed. This sometimes happens either when the crop is a bumper one, or when, owing to the high price of stock in the autumn, the number of animals brought on to the farm for winter keep is fewer than is usual. By devoting a fair area of green-cropping land to Cabbages and planting a proportion of these of the early sorts, longer time is available for the consumption of the green crop than is the case where that system is not followed.

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Journal of Horticulture.

THURSDAY, MAY 16, 1901.

The Land and Its Culture.

THE census returns for various towns
 and villages which have been re-
 turned show, in an unmistakeable
 manner, how surely the popu-
 lation is drifting from the green
 fields and sunshine of country life to
 toils and phantom pleasures of the
 cities. So alarming has the present state
 of affairs in this respect become, that it
 is engaging the serious attention of statesmen,
 philanthropists, and political economists. This
 alarm is felt for two distinct reasons; one is, that
 in consequence of the depopulation of our villages,
 vast areas of land are gradually going out of cul-
 tivation, and this is making us more dependant
 each year upon foreign countries for our food
 supplies. The other drawback, which is, perhaps,
 the more serious of the two, being that the
 stamina of the nation is gradually undermined
 in consequence of the artificial conditions of city
 life; and when the reserve of physical vitality,
 which has hitherto been drawn from the country,
 is exhausted, what then will be the result?
 Shall we gradually become a nation of weaklings?
 or will some method be found of solving the
 problem, or a solution be brought about by natural
 laws?

In my opinion, the two great difficulties
 outlined above are indissolubly connected with
 each other, and when that great problem—how to
 make the cultivation of the soil generally pro-
 fitable—is solved, then will the population troop
 back "through the gates of the cities" to the
 pleasures and sunshine of country life. A love of
 country life seems to be an instinct implanted in
 almost every human breast, and it is only the
 poverty and monotony of rural districts which
 has, in the past, driven so many to the towns. For
 a time the countryman is delighted with town
 life; the higher wages, fewer hours of labour, and
 greater facilities for pleasure; but when middle

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age is reached, and, perhaps, health begins to fail, the advantages, which at one time appeared so great, seem like phantoms of the past, and a desire to return to the country fields of youth is great and pressing; but, alas! there seems no prospect there.

Neither is the outlook bright for old age spent in town. The wages, which at one time looked so high, seem to have vanished in the higher expenses of living, and in tiding over difficulties when trade was slack or health failing. On the other hand, the expenses connected with country life are small indeed in comparison, and when health is good, each day spent under the clear blue sky is a day of pleasure, or, perhaps I should write, happiness. There are many who enter in the race for wealth, and some who win, though it does not always bring happiness in its train; but when the gold is won a home in the country is often one of the first things sought for. How surely does this show us that we cannot, without paying some penalty, be drawn, for any length of time, from the only natural life—viz., one spent to a great extent among country surroundings.

The whole question as to how such matters are to be successfully dealt with, is fraught with great difficulties, but at various times during our national existence difficulties as great have been faced and overcome, and I for one believe that out of the present evil good will in the near future come, for although English people move slowly, by degrees they manage to adapt themselves to altered circumstances. In a thickly populated country like our own it seems absurd to believe that the land will, for any length of time, cease to yield a profitable return when cultivated for the purpose of providing a supply of food. Rents have fallen to a very low point; land in agricultural districts can be bought very cheaply, and there are now so many facilities for acquiring it that the number of men who own the land they cultivate is now rapidly increasing. Thus having a direct interest in maintaining the full fertility of the soil, they are managing it in a way likely to be of benefit to themselves, their offspring, and their country.

I have travelled a good deal of late, and have usually found that the owners of small farms and market gardens are prospering steadily, notwithstanding the great competition. In many districts, however, one great want is felt—viz., better means of communication with the large towns. When the produce has to be changed from one line to another the cost of carriage is greatly increased, and it often happens that in outlying districts, far from a main line, the soil and situation is splendidly adapted for market gardening. If a network of light railways could only be established all over the country, for the purpose of collecting and conveying produce to central points, they would offer immense advantages to market gardeners and farmers. Telegraphic and telephonic communication with the principal markets is now pretty well established throughout the country, and growers have therefore good opportunities of ascertaining the state of the markets before sending their produce; but there is far too much difference between the price received by the grower and that paid by the consumer. The produce sent to large towns usually passes through the hands of the commission agent, who is interested in selling quickly, as his profit is assured, whereas if such profit were regulated by the price obtained for the produce the agent would be as much interested as the grower in obtaining the highest prices. In smaller towns, where there are few commission agents, the grower takes his produce to the market, when the shopkeepers buy from him direct, but they have a way of forming themselves into a "ring," so that they can practically buy at their own price, which accounts for the absurd figures at which produce is sometimes sold.

Let me give one instance. I am acquainted with a grower who, early last autumn, took a good sample of highly coloured Apples to the market of a small town; the highest price he could obtain was $\frac{1}{2}$ d. per lb., yet those very Apples were labelled in the shop window at $\frac{1}{4}$ d. per lb. This, I think, shows up one of the weakest points in connection with market gardening. Shopkeepers have been able to buy very cheaply in the wholesale markets, they have retailed at a great profit, and a few years ago some quickly made their fortunes. What is the result? Why, by far too many people opened green-grocers' and fruiterers' shops. There are now two or three where there should be only one. Under such circumstances the limited amount of produce which each can sell makes it necessary for them to obtain a large profit on each article to obtain a living; and as the shopkeepers are shrewd enough to keep their prices pretty uniform, the maintenance of so many shops has to come out of the pocket of the grower. If there were fewer shops, each would sell a far greater amount of produce, and the shopkeeper would be satisfied with less profit on each article. Both the retailer and the grower would then be more prosperous than they are to-day, yet the public would pay no more, because the expenses of distribution would be lessened. As matters stand at present the grower has to pay, indirectly, the rent and expenses of two or three shops, where one could supply the public equally well.—H. D.

Dahlia Analysis.

THE Dahlia season of last year was by no means a favourable one. The dry spring and early summer, and the scorching weather in July, proved very trying to the plants, particularly to those growing on anything like porous soils. Indeed, it was only after the exhibition season was over that sufficient rain fell in the south of England to enable the moisture-loving Dahlia to grow and flower with its usual freedom. From that time until after the middle of November the conditions remained so moist and genial that seldom has there been known such a profusion of bloom so late in the year. I mention these particulars in order that it may be better understood the adverse circumstances under which the last exhibition of the National Dahlia Society was held. The unfavourable character of the season is no doubt to some extent answerable for the small number of Show and Fancy Dahlias staged at that exhibition, and also for the quality of the flowers not being up to the usual high standard. In fact, at no previous show held by the Society, with the single exception of that of 1893, have these two important sections, taken together, been as indifferently represented. On the other hand, only once before in the last eleven years have the Pompons been as largely shown. The singles were rather better represented than at most of the recent exhibitions of the Society. Bunches of Cactus Dahlias were not as numerous as in 1897 or 1898, but shown singly on boards three times as many Cactus blooms were staged as at either of the two previous exhibitions.

The number of blooms or bunches, as the case may be, set up in competition at the National Dahlia Society's exhibition at the last five shows, in each of the five sections into which Dahlias are now divided, will be found in the following short table:—

	1896	1897	1898	1899	1900
Shows, No. of blooms ...	798	930	838	702	682
Fancies " " " " " " ...	276	312	305	336	314
Pompons " " " " " " ...	192	234	190	180	222
Cactus " " " " " " ...	220	432	361	297	354
Cactus, shown singly ...	—	—	216	216	798
Singles, No. of bunches...	126	116	131	117	126

In the above short statement no account is taken in the case of the Shows and Fancies of the number of blooms set up in the classes for three or more flowers of any one variety, nor in the case of the Cactus varieties of the exhibition blooms staged in vases.

Show and Fancy Dahlias.

Whenever their records will allow of this being done, and to this rule there are comparatively few exceptions the positions of the Shows and Fancies in the tables are dependent upon the average number of times each variety was staged at the last eight Crystal Palace exhibitions.

It will be noticed that in these analyses considerable prominence is given to the Show and Fancy sections. Several reasons might be given for this. In the first place, there are scarcely any other florists' flowers whose records are so admirably suited to this method of treatment, and which will consequently allow of the different varieties being so accurately placed in their order of merit as exhibition varieties. But, apart from this, there are no other Dahlias which have been brought to such a degree of perfection, which present so many points of interest to the cultivator, and which are, therefore, so well adapted for exhibition purposes. Moreover, in the present day, when the merits of these fine Show and Fancy varieties appear likely to be somewhat overlooked in the rush for the more popular and attractive Cactus Dahlias, it is, I think, desirable that the cultivation of these two types should receive all the encouragement that can be given them. The unfavourable character of recent summers may in some measure account for the falling off in the number of exhibitors, for there is no other class of Dahlia so dependent upon favourable climatic conditions for its successful culture.

For fifteen successive years Mrs. Gladstone has stood at the head of the table of Show Dahlias, for constant as some of the leading varieties in this section have proved themselves to be, there has been none other quite as constant as this, the premier flower. At the last exhibition it was not as frequently staged as the second Dahlia on the list, R. T. Rawlings, while Duchess of York was set up an equal number of times to Mrs. Gladstone; but as yet there are no signs of the leading flower being superseded by either of these grand sorts, nor indeed by any other in the table. Duchess of York and Florence Tranter have never before been as frequently staged as they were last year, while R. T. Rawlings, Miss Cannel, T. J. Saltmarsh, Victor, Prince of Denmark, Mrs. D. Saunders, and Diadem, were also exceptionally well represented. On the other hand, the following sorts have seldom, if ever before, been as sparsely shown—William Rawlings, John Hickling, Henry Walton, Ethel Britton, Arthur Ocock, Shirley Hibberd, Willie Garratt, and Majestic.

The additions to this section in recent years have not been as numerous as formerly, which is to be regretted, as the appearance of sterling novelties always adds so much to the interest taken by the cultivator in any flower. The varieties in the table which are five or

less years old are seven in number. Dr. Keynes, sent out in 1896, heads the list at No. 15. It has risen one step since the previous year, and for the last three shows has maintained a steady record. Next comes Florence Tranter, another 1896 variety, which appeared in no fewer than twenty-one stands last year, or even more frequently than such established varieties as William Rawlings, Harry Keith, and Mrs. Langtry. In the last analysis it stood at No. 26, but has now risen to No. 16. Shotesham Hero, an 1895 variety, rises from No. 22 to No. 20. Mabel Stanton (No. 36), distributed in 1896, for the first time secures a place in the table. In Mrs. Every we have still another 1896 variety, and this has risen from No. 50 to No. 46. Muriel Hobbs, sent out in 1898, on the other hand, has fallen from No. 44 to No. 51, while Daniel Cornish, distributed in 1897, will be found at the bottom of the table.

Rev. J. B. M. Camm, although the oldest variety but one on the list of Fancy Dahlias, still retains the premier position it secured five years ago—a lead which at present is scarcely threatened. At the last exhibition, however, Mrs. John Downie was rather more frequently staged. The variety last named and T. W. Girdlestone were, moreover, the only two Fancies which then appeared in unusually good form. On the other hand, Duchess of Albany, Mrs. Saunders, Dorothy, and Frank Pearce were shown in comparatively few stands. There were only two Fancies in the table which are five or less years old. Gold-

smith, sent out in 1895, has risen from No. 8 to No. 5 since the last analysis was issued; and Watchman, an 1899 variety, on its first appearance in the table takes up an excellent position at No. 10.

Pompon Dahlias.

We must now turn our attention to that fascinating section the Pompons, the display of which in 1900 was unusually good. Unlike the more conservative Shows and Fancies, their diminutive representatives are of a more enterprising character, and therefore an average for the last four years is more likely to place them correctly in their order of merit than if a longer term were allowed them. Treated in this way they arrange themselves as follows:—Bacchus, Tommy Keith, Nerissa, Emily Hopper, Phœbe, Captain Boyton, Sunny Daybreak, Whisper, G. Brinckman, Douglas, Dr. Jim, Arthur West, Donovan, Ganymede, Lilian, Distinction,* Eurydice, Snowflake,* and Clarissa. The varieties marked with an asterisk were sent out in 1899, or subsequently. The only change worth mentioning since the last analysis is the improved position of Sunny Daybreak, which has risen from No. 11 to No. 7. For general garden cultivation the following, in their respective colours, can be confidently recommended:—*White*, G. Brinckman; *yellow*, Sunny Daybreak, Clarissa, and Whisper; *orange*, Phœbe; *rose or pink*, Nerissa; *scarlet*, Bacchus; *crimson*, Arthur West; *maroon*, Douglas; *fancy*, Tommy Keith.

SHOW DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1900 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	29.1	25	Mrs. Gladstone	1884	Hurst	Pale blush
2	25.9	28	R. T. Rawlings	1886	Rawlings	Clear yellow
3	23.3	22	John Walker	1892	Walker	White
4	21.8	21	Colonist	1887	Keynes	Chocolate and fawn
4	21.8	25	Duchess of York	1894	Keynes	Lemon, edged salmon pink
6	21.4	14	William Rawlings	1881	Rawlings	Crimson purple
7	21.1	21	J. T. West	1887	Rawlings	Yellow and purple
8	19.4	17	Harry Keith	1886	Keynes	Rosy purple
9	17.8	16	Mrs. Langtry	1885	Keynes	Cream and crimson
10	17.2	17	Arthur Rawlings	1892	West	Deep crimson
11	16.9	18	Duke of Fife	1890	Keynes	Rich cardinal
12	16.8	17	William Powell	1892	West	Primrose yellow
13	16.5	13	James Cocker	1871	Keynes	Purple
13	16.5	18	Maud Fellowes	1889	Fellowes	Pale pink, shaded purple
15	15.5	14	Dr. Keynes	1896	Keynes	Rich buff
16	15.0	21	Florence Tranter	1896	Tranter	Blush white, edged rosy purple
17	14.9	19	Miss Cannell	1881	Eckford	Cream and crimson
18	14.6	8	John Hickling	1890	Keynes	Clear bright yellow
19	13.8	10	Mrs. W. Slack	1886	Keynes	Blush white and purple
20	13.3	12	Harrison Weir	1883	Rawlings	Yellow
20	13.3	5	Henry Walton	1873	Keynes	Pale yellow and scarlet
20	13.3	13	Shotesham Hero	1895	Fellowes	White, tipped and shaded rose
23	12.5	8	Ethel Britton	1880	Keynes	White and purple
24	12.0	14	Chieftain	1894	Keynes	Parplish lilac
25	11.5	6	Arthur Ocock	1892	Rawlings	Reddish orange
25	11.5	8	Shirley Hibberd	1881	Rawlings	Dark crimson
27	11.4	16	T. J. Saltmarsh	1885	Rawlings	Yellow and chestnut
27	11.4	6	Willie Garratt	1887	Garratt	Bright cardinal
29	10.6	13	Goldfinder	1881	Fellowes	Yellow and red
29	10.6	19	Victor	1887	Keynes	Dark maroon
31	10.5	17	Prince of Denmark	1881	Fellowes	Dark maroon
32	9.3	6	Warrior	1894	Keynes	Scarlet
33	8.8	10	George Rawlings	1882	Rawlings	Dark maroon
33	8.8	10	Virginale	1893	Keynes	Blush white, edged pink
35	8.3	10	Perfection	1889	Fellowes	Orange buff
36	8.0	8	Mabel Stanton	1896	Tranter	Deep yellow
37	7.9	1	Majestic	1890	Keynes	White, edged purple
38	7.8	6	Hon. Mrs. P. Wyndham	1881	Keynes	Pale yellow and rose
39	7.6	10	Mrs. D. Saunders	1888	Rawlings	Pale, edged rose
40	7.5	3	Mr. Glasscock	1886	Rawlings	Purple
41	7.1	6	Glowworm	1889	Turner	Bright orange scarlet
42	7.2	6	Crimson King	1887	Keynes	Deep crimson scarlet
43	6.8	5	Alice Emily	1890	Keynes	Buff yellow
43	6.8	6	Mrs. Morgan	1893	Fellowes	Pale ground, tinted rosy purple
45	6.4	9	Diadem	1888	Fellowes	Deep crimson
46	6.0	6	Mrs. Every	1896	Keynes	White, edged lilac
47	5.9	3	Earl of Ravensworth	1883	Harkness	Lilac
48	5.8	1	Burgundy	1877	Turner	Dark puce
48	5.8	1	William Keith	1888	West	Dark plum
50	5.6	4	Queen of the Belgians	1887	Rawlings	Cream and puce
51	5.5	4	Muriel Hobbs	1898	Hobbs	Yellow
51	5.5	3	Prince Bismarck	1879	Fellowes	Puce
53	5.0	6	Daniel Cornish	1897	West	Terra cotta red

Cactus Dahlias.

The following list has been drawn up in order to show the latest developments in the Cactus section, and the number of times the different varieties were staged at the last three exhibitions of the National Dahlia Society. The varieties are arranged in the list according to their records for the last exhibition only.

	1900	1899	1898	
Britannia, 1898	55	26	14	salmon pink and apricot
C. Woodbridge, 1897... ..	47	25	18	crimson
Mary Service, 1898	42	23	21	russet and heliotrope
Night, 1898... ..	41	18	18	dark crimson
Starfish, 1897	41	25	34	orange scarlet
Countess of Lonsdale, 1899	38	17	—	salmon and apricot
Keynes' White, 1898	26	23	19	ivory white
Mayor Tuppenny, 1900 ...	26	—	—	yellow, orange and fawn
Mrs. Carter Page, 1900 ...	26	—	—	deep velvety crimson
Viscountess Sherbrook, 1899	26	9	—	reddish terra cotta
Laverstock Beauty, 1898 ...	24	8	—	soft red
Magnificent, 1899	23	17	—	salmon pink and apricot
Mrs. J. J. Crowe, 1900 ...	23	—	—	clear canary yellow
Uncle Tom, 1900	23	—	—	dark crimson
J. F. Hudson, 1899	20	—	—	reddish carmine
Lucius, 1899	20	13	—	deep orange
Mrs. A. Peart, 1893	18	6	8	creamy white
Radiance, 1899	18	—	—	bright orange scarlet
The Clown, 1899	18	—	—	brick red, edged white
Zephyr, 1900	18	—	—	bright rose pink
Cinderella, 1897	16	11	18	purple
Emperor, 1900	15	—	—	velvety plum
Fusilier, 1896	13	11	24	coral red
Island Queen, 1898	13	7	11	lilac mauve
Stella, 1898	12	9	—	bright crimson
Arachne, 1898	11	7	15	white, edged crimson
Maurice S. Walsh, 1900 ...	11	—	—	yellow, shading to salmon
Mrs. J. Goddard, 1898 ...	11	7	—	crimson scarlet
Cornucopia, 1900	10	—	—	deep reddish salmon
Innovation, 1900	10	—	—	crimson and white
Loyalty, 1900	10	—	—	coral red

It is very satisfactory to find that there are at last some signs of permanency manifesting themselves in that popular and charming section, the modern Cactus Dahlia. For instance, of the first twelve varieties in the list given last year, eight are to be found in the leading twelve in this year's list, the four absentees being Lady Penzance, Lucius, Alfred Vasey, and Cinderella. The list has this year been extended; for although there are these signs of permanency, there is also, on the other hand, a tremendous flood of new varieties, the progress of which it will be of the greatest interest to watch from season to season in future analyses. The best of these novelties will be sure to rise rapidly to the front, while those which are not of sterling merit, or which have been superseded in their particular shade of colour, will, with more or less rapidity, sink to lower positions in the table. The varieties sent out in 1900 at present occupy the following respective positions:—Mayor Tuppenny and Mrs. Carter Page (No. 7), Mrs. J. J. Crowe and Uncle Tom (No. 12), Zephyr

(No. 17), Emperor (No. 22), Maurice S. Walsh (No. 26), Cornucopia, Innovation and Loyalty (No. 29), W. Treseder (No. 32), Augustus J. C. Hare, Elsie, and William Jowitt (No. 33), Ajax, Lodestone, Major Weston, and Mrs. Sanders (No. 36), Olive and Progenitor (No. 40), and Green's White (No. 42).

Placed according to their colours, by no means an easy task, as there are often so many different tints in the same flower, they come out as follows:—*White*, Keynes' White, Mrs. A. Peart; *yellow*, Mrs. J. J. Crowe; *pink and mauve*, Zephyr, Island Queen; *scarlet*, Starfish, Radiance, Mrs. John Goddard; *crimson*, Charles Woodbridge, Mrs. Carter Page, J. F. Hudson, Stella; *purple*, Cinderella, Emperor; *maroon*, Night, Uncle Tom; *various shades of red, salmon, apricot, etc.*, Britannia, Mary Service, Countess of Lonsdale, Major Tuppenny, Viscountess Sherbrook, Laverstock Beauty, Magnificent, Lucius, Fusilier, Maurice S. Welsh, Cornucopia, Loyalty. *Fancy*, The Clown, Arachne, Innovation.

For general cultivation, the following selection may prove useful, as in it I have endeavoured to select only varieties of good habit, which display their flowers well above the foliage, with little, if any, thinning of the shoots:—*White*, Salisbury White, Keynes' White; *yellow*, Mrs. J. J. Crowe; *pink, salmon, and mauve*, Britannia, Countess of Lonsdale, Mary Service, Exquisite, Magnificent, Island Queen; *scarlet and crimson*, J. E. Frewer, Mrs. John Goddard, Cycle, Charles Woodbridge, Starfish; *maroon*, Matchless, Night.

Single Dahlias.

Arranging the single-flowered Dahlias according to the average number of times they were staged at the last three exhibitions, they come out in the following order:—Polly Eccles, Victoria, Northern Star, Aurora, Phyllis, Demon, Miss Glasscock, Miss Roberts, Duchess of Marlborough, The Bride, Tommy, Naomi Tighe, Jeannette, Jack Sheppard, Peacock, Beauty's Eye, The Bride, Phyllis, and Formosa. I fancy the principal reason why single Dahlias are not more generally grown is because they come so readily from seed, that it is not considered worth the little extra trouble and expense in planting named varieties. As an instance of the worthlessness of seedlings as compared with named sorts, I may state that each year I grow myself about 500 plants raised from seed saved from the choicest varieties, with the result that if I can find among them half a dozen varieties which appear to be in any way improvements on existing kinds I consider myself very fortunate. Another thing that I think has served to bring these single Dahlias into disfavour is that many of the Fancy varieties prove very disappointing on anything like heavy soil.

The following Selfs and Fancies may, however, among other beautiful sorts, be relied upon to come true in almost any soil—Polly Eccles, Victoria, Aurora, Northern Star, Demon, Miss Roberts, The Bride, Beauty's Eye, Amos Perry, and Rosebank Cardinal. I have often before in these pages advocated the cultivation of the single Dahlia. It is the easiest of all Dahlias to grow, for its cultural requirements are of the simplest. Only remove the seed pods once a week, and they will reward the amateur with a continuous supply of the most charming, if fleeting, flowers, until the plants are cut down by frost in November.—E. M., *Berkhamsted*.

FANCY DAHLIAS.

Position in Present Analysis.	Average Number of Times Shown.	No. of Times Shown in 1900 in True Relative Proportion to the Average.	Name.	Date of Introduction.	Raiser's or Introducer's Name.	Colour.
1	20.1	17	Rev. J. B. M. Camm	1873	Keynes	Yellow and red
2	17.8	11	Duchess of Albany	1884	Turner	Orange and crimson
3	16.8	20	Mrs. John Downie	1889	Turner	Orange and scarlet
4	15.1	11	Mrs. Saunders	1872	Turner	Yellow and white
5	14.0	12	Goldsmith	1895	Keynes	Yellow, striped crimson
6	13.3	14	Matthew Campbell	1889	Keynes	Buff and crimson
7	12.5	7	Dorothy	1888	Keynes	Fawn and maroon
8	11.9	13	T. W. Girdlestone	1890	Keynes	Lilac and maroon
9	11.4	8	Frank Pearce	1886	Rawlings	Rose, striped crimson
10	10.0	10	Buffalo Bill	1890	Keynes	Buff, striped vermillion
10	*10.0	10	Watchman	1899	Keynes	Golden yellow, striped crimson
12	9.5	8	Emin Pasha	1894	Keynes	Yellow, striped crimson
12	9.5	9	Peacock	1877	Turner	Maroon and white
14	8.3	5	Rebecca	1883	Keynes	Lilac and crimson
15	7.8	5	S. Mortimer	1894	Mortimer	Rose, striped crimson
16	6.8	4	Comedian	1892	Keynes	Orange and crimson
17	6.3	5	Dandy	1891	Keynes	Orange, striped crimson
18	5.8	5	Hercules	1877	Keynes	Yellow and crimson
19	5.1	5	Henry Eckford	1886	Rawlings	Yellow and red

* A new variety, the position of which is dependent on its record for 1900 show only.

**Cattleya Mendeli Queen Alexandra.**

THIS very beautiful and handsome new variety of *Cattleya Mendeli* was shown by Mr. H. A. Tracy, Twickenham, before the Orchid Committee at the last Drill Hall meeting, on the 7th inst. The lip is finely fringed and fluted, the forepart being well expanded and edged

heat. On the contrary, a cool moist atmosphere ought always to surround the plants, this being very distasteful to insects which attack it, and helping materially to swell up the large inflated-looking bulbs. In summer it is hardly possible to shade too heavily, but in winter these plants from high mountain habitats pine for every ray of light and sun. If grown during the former season in a house with a north aspect, it should always be removed to a lighter structure on the approach of the dull days, or it will not be easy to keep it in health.

Dendrobium pulchellum.

Although this pretty dwarf species is easily grown it is surprising how very seldom one comes across good specimens of it. They are usually starved looking, with thin and poorly coloured flowers. The reason is that probably growers will not consider how easily such a



CATTLEYA MENDELI QUEEN ALEXANDRA.

with rose-purple. The throat is yellow, while the large substantial sepals and petals are rose-lilac coloured, slightly tinged with purple. It received an award of merit.

Odontoglossum pardinum.

Both in habit and culture this plant differs from the majority of *Odontoglossums*, and although it is a very pretty and useful species, it is questionable whether one-half of the Orchid growers in this country even know it. The bulbs are large and green, and not so covered with scales as are most others. The roots are soft, and very easily injured by an overdose of moisture, or by water remaining in a stagnant state about them. Yet, owing to their size, a fairly wide receptacle is necessary, so it is well, in order to avoid closeness, to have only a very thin layer of compost, with plenty of loose lumps of crocks and other hard material mixed with it.

Its habitat is on a volcanic mountain in Peru, but, although growing naturally so near the equator, it will not flourish in any great

small plant may be incommoded by sudden atmospheric changes, from wet to dry or from heat to cold, that go on in badly managed Orchid houses. The strong and sturdy growers do not suffer readily, but these small ones are very apt to, and the aim of the grower must always be to keep the house as regularly heated and well balanced as possible.

This, with due attention to the needs of the roots and the rise and fall of the temperature as the growing and resting seasons come round, will lead to healthy and free flowering plants. Very little in the way of compost is necessary, but the bare block system is too poor for it. Small trellised rafts with a little peat and moss are better, and the routine of culture is the same as that for deciduous *Dendrobiums* generally. The blossoms are produced at this time of year, and are not unlike those of a small *D. Devonianum*, with a faint but delicate fragrance. It is a native of China and possibly some parts of India. *D. pulchellum* is the name it is known under, but botanists say its correct name is *D. Loddigesii*.—H. R. R.

Common Mistakes in Fruit Culture.*

(Continued from page 386.)

Root-pruning

As a rule this is done too late in the season. It should be carried out as soon as ever the fruit is gathered, and *before* the leaves fall, as some new rootlets are then formed before Christmas, and a crop may be secured the first year. When done too late the trees may die, or at best go to sleep, and form scarcely any leaves or roots for one or two seasons. The greater the care given to this process the better the results are, and should a dry time follow the operation a good overhead syringing is necessary, as well as a liberal mulching.

It often happens that Plums on walls grow very vigorously the first few years, and do not fruit. A timely lifting, root-pruning, and replacing in loamy soil, without manure, will check this, and throw them into a fruiting condition. I strongly advise cordon trees on walls to be at first planted upright, and when they reach the top of the wall the time has arrived when they require root-pruning, and they can then be placed at an angle. In this way spurs are formed on both sides of the stem, while when at first planted obliquely the spurs are naturally strongest on the upper side of the stem.

Over-pruning and Stopping.

We often see Vines and other fruits severely checked by these processes. It is advisable to proceed by degrees, and I believe more Grapes are spoiled by over-thinning of the foliage than anyone is aware of, as the check caused by removal of the leaves often comes at a critical time and the colour is lost. The finest Grapes I ever saw were in a vinery where the thickness of the foliage made it almost twilight, even on a bright summer day. The operation of thinning fruit is generally neglected in the early stages, and the after crop is therefore small and inferior in flavour. It is better to harvest a moderate crop of fine well-flavoured fruit than to have a big gathering of what can only be called second-rate. In Peaches and Nectarines the larger the fruit the better, as a rule, the quality, and in a certain but lesser degree this applies to Pears also; and it was never more evident than it has been in the past season (1900), when thousands of bushels of fruit have been spoiled for the want of thinning. Mistakes are often made in gathering late Pears and Apples before they are thoroughly matured, and consequently the fruit shrivels and is comparatively tasteless. Growers should not mind losing a few fruits from falling; it is better to have six good, firm, crisp Apples or Pears than a dozen flabby and wrinkled; and a frost of even 10° will not harm either Apples or Pears upon the trees. To illustrate this, we often find orchard house fruit keeping firm to the last, because so thoroughly matured. On the other hand, early Pears must be gathered before they are mature, or they become mealy; while all early dessert Apples should be eaten direct from the trees, as they spoil when stored, and it is a good plan to let them fall by themselves on to clean straw laid under the trees. The culture of orchard house trees in pots is frequently a failure because growers do not consider the confined space the roots occupy in their pots, nor do they give sufficient variety of food and nourishment; for instance, a pyramid Pear outside would feed from some 8 feet square of soil, whereas in a pot there is but a foot diameter to operate in. It is necessary also to syringe pot trees very freely to counteract the evaporation from the foliage.

Many employers find fault with their garden produce, and say, "But I see so much finer in the markets." Naturally, because in the first place the best makes the most money, and the market growers are keen cultivators, and have learnt that, to secure success, large, well-ventilated, and thoroughly heated houses, specially adapted to the needs of each subject, give the best results; while in private gardens a dozen subjects, with perhaps opposite requirements, are crowded into one house; and where the surplus fruit from private gardens is sold it is useless to send the inferior examples to market. It is often a cause of failure when over-strong or over-stimulating manures are called into use to make up for slovenly preparation either in thinning, mulching, or planting. Patience is often severely tried by adverse seasons; for instance, an amateur once called me in to consult, and complained of the poor quality of the fruit in his garden. It was a very exceptionally cold and wet season. I assured him that he had the best of varieties, and that a more generous season would give him all he desired in the point of quality. He was, however, a type of those who ask much advice, and then act on their own wisdom; for he sent elsewhere, and had all his trees cut back and regrafted; and I may be pardoned for saying that he not only lost two years, but the very same varieties were grafted on again, simply because there were none better. It is in all cases requisite to wait a cycle of years before one can form a correct judgment. Many hundreds of pounds have been sacrificed in this way by market growers rooting up bush

fruits, and by regrafting on supposed inferior varieties, which a little better culture would have made profitable. How many of our orchards are literally starved to death! Animals are turned in them to eat the grass, but they are never fed with good nitrogenous food, and consequently all which should mature the tree roots is lost. Many a worn-out orchard has been quite recovered by feeding and fattening sheep in it, and a timely dressing of artificial manure has helped both young and old orchards, when combined with a due thinning out of the boughs.

(To be continued)

Cactus Cinerarias.

It would be interesting to know how or why the adjectival title "Cactus" was first applied to certain florists' flowers having fluted and twisted petals. Certainly the "Cactus" type of flower has become popular for the nonce, and the latest sport in this direction has been with greenhouse Cinerarias. The plants that have assumed this "Cactus" form, of which a typical plant is seen in the illustration, have been derived from cruenta hybrids, that is, hybrids that have been raised by crossing *Senecio cruentus* with several forms of the dwarf garden Cinerarias. The "Star" Cinerarias were first originated by these crossings, and now the Messrs Cannell & Sons at Swanley have been rewarded by the very distinct type to which we call attention. The blooms are individually as large as an ordinary single Cactus Dahlia, having fluted, tortuous petals, radiating beautifully. The plants will not be seen at any of the exhibitions this year, as they are now seeding, but we may expect to see them on public view perhaps in another season. The colours at present are mainly confined to rich crimson, mauve, and such other shades, though of course the range of variety in this respect may be expected to be greatly increased. Along with the "Cactus" Cinerarias, at the time of our visit to Swanley, the strain now known as the "Star" Cinerarias were at their best. The older florists' varieties, with large rounded flowers and dwarf compact habit, were also seen in splendid condition.

Greenhouse Hardwooded Plants.

(Continued from page 386.)

Cytisus.

CYTISUS (*fragens*) *racemosus* is so well known that I need hardly say anything about it. The treatment accorded to Acacias answers well in this case. Allow them a good proportion of loam in the potting soil, this causing them to produce flowers much more freely than when grown in peat and sand alone. *C. (fragens) racemosus* is possibly the best and most generally grown one, but *C. stenopetalus* is well worth growing, as it flowers freely, and has beautiful silvery grey foliage. *Coronilla glauca* is also another very useful greenhouse plant, and does well under the same treatment, but of late years I have seen very little of it.

Eriostemons.

These also form another charming genus of Australian plants well adapted for the decoration of the greenhouse. Their flowers are produced in great profusion, and the flowering period extends over a long time, although the individual flowers are rather short-lived. They have also the advantage of being easy to grow. Raise them from cuttings, and employ peat and sand, with the addition of a little light loam for potting. Where space will permit they are splendid subjects to plant out in the conservatory. *Eriostemon buxifolium*, *cuspidatum*, and *myoporoides* are the more select, the latter having white flowers, and the two former white tinged with rosy pink. *E. scaber* is rather a weak grower, and should be grafted upon some of the stronger ones. They all flower during spring.

Croweas and Correas.

Croweas, too, are Australian plants, and at first sight have a striking resemblance to Eriostemons both in the shape of the flowers and leaves. The colour, however, is different. *C. elliptica*, with light pink flowers, and *C. saligna*, with purple, are not often seen. I think the chief reason of their usual sickly appearance is caused by too much fire heat. They can be propagated from cuttings and grown under the same treatment as Eriostemons. Correas are among the prettiest of greenhouse plants, and can be grown from cuttings, but any of the weaker-growing ones are better grafted on *C. alba*, a strong-growing species. They soon form good plants, attention being given to them in the way of stopping and pinching to get good bushy plants, as they have a tendency to get bare at the bottoms. Pot in

* A paper read before the Royal Horticultural Society, on Nov. 20th 1900, by Mr. GEO. BUNYARD, V.M.H.

peat and sand. They enjoy plenty of water, therefore ample drainage should be given. Towards the end of summer remove them outside, but do not expose to the full power of the sun. *Correa cardinalis* is one of the best, the flowers being bright scarlet tipped with green. *C. ventricosa*, *C. pulchella*, and *speciosa* are other good sorts.

Leschenaultia and Chorizema.

Leschenaultias are perhaps the most difficult of all to grow. They succeed with treatment recommended for *Ericas*, but should not be placed outside during summer, as they will not bear exposure to the sun. During winter they should be kept well up to the glass, and the greatest care taken in watering them; even then they die off without any apparent reason. *L. biloba major* (or *grandiflora*) has rich blue, while *L. splendens* has bright scarlet flowers. *Chorizemas* remain in flower for a very long time, and they at least have the merit of being easier of cultivation than a great many hardwooded plants. They are easily raised from cuttings put in during spring, and succeed well under the treatment accorded other hardwooded plants. The habit is loose and straggling, and to get well-furnished bushy plants they require strict attention as regards stopping. They also make excellent pillar plants, and flower during winter and early spring. *C. Henchmani* was the first species discovered. *C. varium* includes *Chandleri elegans*, and this I think is one of the best.

The Grevilleas.

Grevillea robusta is so well known and so popular that I need say nothing about it. There are, however, two other species less commonly met with, but which are worthy of more consideration. I refer to *G. rosmarinifolia* and *G. Thelmanniana*. These are both easily grown from cuttings. The former, as its name indicates, has leaves like Rosemary, is a strong grower, and has quite a decorative appearance, apart from its curious red flowers, which are produced at the ends of the branches. In Devon I expect this plant is capable of standing out most winters. *G. Thelmanniana* is the best plant of the two, being well worth growing for its graceful habit and foliage, which is of that peculiar greyish colour so common with Australian plants. It has also the additional recommendation of flowering freely in a small state.

Boronias.

No essay on the subject of greenhouse hardwooded plants would be complete without some reference to the *Boronias*, which are admitted to be among the most graceful and useful of all plants, and, with proper attention, will grow and flower very freely. Cuttings are again resorted to, and they do well in peat and sand, with the addition of a little light loam. Let the drainage be good, for they enjoy a plentiful supply of water. *Boronia elatior* is a strong-growing species, also free flowering, so also is *B. heterophylla*, whose scarlet flowers are produced in great profusion. *B. megastigma* should on no account be done without, for, though it has curious dull purple and yellow coloured flowers, they have a delicious scent, and in habit it is the most slender and graceful of them all. If space permitted there are a great many more interesting plants I should have liked to touch on, such as *Aphelaxis*, *Aotus gracillima*, *Darwinia macrostegia* or *tulipifera*, with its curious bracts; *Citrus*, *Lomatia*, *Kennedya*s, which make fine pillar plants; *Platytheca galioides*, which is a beautiful and free-flowering subject; *Polygalas*, and also *Pimeleas*, which are so very useful. Before concluding I must mention that beautiful plant *Aristea* (*Witsenia*) *corymbosa*, which curiously enough belongs to the natural order *Iridæ*. I have found it most difficult to propagate, taking some six months to root.—J. COURTS, *Devon*.

Everlasting or Immortelle Flowers.

PRETTY and interesting as these flowers are, they are not very largely grown, though they merit attention and amply repay good cultivation. The best known and most easily grown is perhaps the *Helichrysum*. *Acrocliniums* are not so common, nor are *Xeranthemums*. The latter is a hardy annual, the other half-hardy. *Rhodanthes*, also half-hardy annuals, are extremely pretty when grown in pots, and for this purpose are extensively grown in some districts in the north of England, 5-inch pots of plants commanding a ready sale in the large manufacturing towns during the present month.

Helichrysums are extremely useful towards autumn, when they flower freely. The fully expanded blooms may be cut and used with other flowers, while the half-expanded flowers can be gathered, drying them in an airy dark shed. They should be tied together in bunches and hung downwards. The colours are various, comprising yellow, white, crimson, purple, scarlet, rose. Being half-hardy the best plan is to raise the plants in pans or boxes, or thinly in a cold frame, from which they may be transferred to positions in flower borders or beds. At this season, too, the seed may be sown outdoors, where with a little protection, moisture, and shading it will soon germinate. The seedlings may be gradually thinned until they stand a few inches apart. A strong central stem is produced, which branches and bears the flowers.

The next most popular everlasting flower is the *Rhodanthe*, which has flowers of white, crimson, rose, and yellow. Seed may be sown for outdoor culture now in a sunny position. Make a fine seed bed and scatter the seed upon it, merely covering with fine soil. Cover with a hand-light or some contrivance which will retain moisture in the soil, and thin the seedlings to an inch apart. The *Rhodanthe* is perhaps more appreciated for pot culture, and may be sown in the pots in which it is to flower, or sown in pans and transplanted; 5-inch pots are the best size, and the seedlings ought to be thinned to, or pricked out, an inch apart.

Grow on a light shelf, carefully watering, and not shading from sun after they are established. A few light sticks may be placed round the edge of the pots, winding round these slender slips of matting (raffia grass) to prevent the plants falling about. The pots must be well drained, the soil light, rich, and porous, consisting of peat, leaf soil, loam, and dried cow manure rubbed through a sieve, also mixing with sand. The stems of the plants are wiry and the flowers small.

Acrocliniums grow about a foot high, and produce double and single flowers in rose and white colours. Sow outdoors now in a very warm, sunny position; it is, however, best grown as a greenhouse annual. *Xeranthemums* are hardy annuals, and may be sown now on a warm sunny bed. Thin the seedlings to a few inches apart when large enough. Flowers are double, and of a globular shape, and produced freely; the colours are violet, purple, and pure white. Like other everlastings, the blooms may be cut just before fully opening, and dried. Their chief value lies in their being useful for winter decoration.—E. D. S.

Horticulture in Natal.—Gardening in Natal, says "Meehans' Monthly," is akin to gardening in Florida, in the United States. The fruits and vegetables popular there are Oranges, Lemons, Pine Apples, and Bananas.



A CACTUS CINERARIA.

NOTES

NOTICES

Weather in London.—Wednesday afternoon, the 8th inst., was very wet; and on Thursday the streets and roads were more than once flooded. The succeeding days up to Tuesday were breezy and sunny. A cool east wind has continuously blown, and so helped to modify the warmth of the sun. Growth is advancing steadily. Wednesday was bracing and delightful.

Weather in the North.—With the exception of the 7th and the 10th, which were dull and drizzly, there has been another week of warm, summer-like weather. Rain has fallen during one or two of the nights, and done much good to pastures and vegetation generally, although still more would be acceptable. Sunday was like a day in June, but cold, with easterly wind in the evening.—B. D., *S. Perthshire*.

Coldness and the Fruit Blossom.—It is feared that a good deal of damage has been done to fruit buds in some parts of Devon by the heavy hail showers which fell last week. Generally speaking, however, growth was not far enough advanced to admit of any very extensive destruction.

Vocal and Instrumental Music.—A concert was given at the London Tavern, Fenchurch Street, E.C., on May 8th, by Messrs. Hurst and Sons' orchestral company and friends. Such vocal worthies as Messrs. A. Cox, D. Fairley, V. F. Cummings, T. A. Baldwin, J. E. Dixon, and the inimitable Mr. R. C. Tucker, were present, and rendered selections in their finest style. Mr. E. Sherwood and Mr. T. N. Cox conducted the orchestra. Would that a "Seedmen's Staff Society" could be formed to help the Gardeners' Benevolent Institution or Royal Gardeners' Orphan Funds.—L.

Ardent Amateur Gardeners.—The statement that there are gardens under bedclothes is supported by no less an authority than that of the Very Rev. S. Reynolds Hole, Dean of Rochester. A district visitor in the Midlands, when calling upon a poor woman, noticed how few were the coverings to her bed. Upon being asked, she admitted that she had another blanket, and was remonstrated with for not using it, as the weather was bitterly cold. It at length transpired that her husband had taken it to cover over some plants he was rearing in a tiny greenhouse, in the hope of saving them from being killed by the frost. Surely devotion to flowers could hardly go much further than this.

Lincolnshire Gardeners and the Temple Show.—At the monthly meeting of the Lincolnshire Gardeners' Association on Wednesday, the 8th, it was arranged to visit the Temple Show at London on the 22nd May, providing that a railway excursion is run from Lincoln. In the event of there being no excursion, the secretary (Mr. George) was instructed to try to arrange to visit Hatfield and St. Albans. It was felt that Wednesday evening was an inconvenient evening for the holding of the monthly meetings, and it was agreed that in future they be held either on Tuesday or Thursday evening. The chief event of the evening was the lecture by Mr. Wipf on the "Fertilisation of Flowers."

Edinburgh Agricultural College.—We learn from our esteemed contemporary, the "North British Agriculturist," that the success of the proposed Agricultural College in Edinburgh is already assured. The committee of the Mid-Lothian County Council have recommended an annual grant of £400 to the Edinburgh Agricultural College. The West Lothian County Council, on the motion of Mr. Drysdale, factor for Lord Rosebery, voted an annual grant of £300 to the college; and the Perthshire County Council, on the motion of Mr. Andrew Hutcheson, voted an annual grant of £150 to the college—the latter county making a similar grant to the Glasgow Agricultural College. The annual grants thus given to the Edinburgh College by the three County Councils in question total up to £850, and as the Government, through the Scotch Education Department, will contribute a sum equal to that raised by local effort, there is thus a substantial annual income already secured for the Edinburgh College. If the other County Councils in the east and south-east of Scotland do as well as Lothians and Perthshire have done, the Edinburgh College will be in full working order by October.

Hampton Court Gardens.—The spring flowers at the Hampton Court Gardens are now in their full glory. Bulbs in the form of Hyacinths, Tulips, Narcissi, and bell-like Fritillarias furnish much of the bloom, so also do Wallflowers, Arabis, Aubrietia, Auriculas, but especially Polyanthus, of which there is no doubt one of the finest shows of these popular flowers to be seen in the kingdom.

Appointments.—Mr. George Cypher has been appointed head gardener to S. Gatrix, Esq., West Point, Whalley Range, Manchester. * * Mr. Chas. W. Head, for the past two years and a half head gardener to Chas. E. Hill, Esq., Winnal House, Haywards Heath, as head gardener to Mrs. Gebhardt, The Rocks, Boarshead, Tunbridge Wells. * * Mr. E. Horton, for some time deputy foreman in the herbaceous grounds at Kew, as foreman in the alpine and herbaceous plants department of Messrs. Clibran's Nurseries, Altrincham.

Carpet Bedding.—Many wild ideas no doubt possess the minds of certain enthusiastic gardeners, but perhaps the most ambitious scheme is that of one distinguished amateur, who means to represent a map of England, set in a sea of blue Lobelia. As the country is to be divided off into counties, each of which, as far as possible, is to be indicated by plants of a different colour, it will be understood that the task he has undertaken is no light one. Beds representing coats of arms of various noble families in living plants are frequently made the designs of "carpet beds."

Fruit Trees in Cornwall.—A correspondent on May 6th writes to the "Western Morning News":—"Rarely indeed have Cornish fruit trees appeared so backward in early May as this year; little blossom generally is showing except in sheltered nooks. This may, however, prove a gain in the end, as early blossom is often cut back by frost late in April and early in May, and crops damaged. During the recent days' sunshine, grass and other green crops have wonderfully improved. More grass for the cattle is increasing the quantity and improving the quality of milk and butter."

Sparrows and Gooseberry Bushes.—Notes from Willingham describe the fruit prospects as very promising. The gardens and orchards are a beautiful sight. They present vast sheets of white bloom in all directions, but the sparrows are a great plague, for they have destroyed at least two-thirds of the Gooseberry crop in the gardens near the houses. These pests have now attacked the blossoms on the Plum trees. They nearly nip out the centre containing the honey cup, and the remainder falls to the ground, making it look like a fall of snow. Many years ago the overseers used to buy dead sparrows and sparrows' eggs, using a fund derived from letting the public recreation ground. The custom might be usefully revived.

The Study of Plant Life.—For some time past the London County Council has arranged special beds of plants in Battersea, Ravenscourt, and Victoria Parks, with a view to affording assistance in the study of practical botany to scholars of elementary and secondary schools. At each of these parks about twenty beds are arranged near the paths, each bed containing specimens of a distinct order of plant, each plant being labelled with its common name and its Latin name. The arrangement should be of great utility to school teachers and others who are engaged in the task of education. In order that the education by means of these small botanical gardens should be of a thoroughly practical character, teachers may obtain, from the Council's Technical Education Board, orders which will enable them to secure such specimens as may be required for teaching purposes.

Wolverhampton Gardeners.—We learn that the annual outing of the members of the Wolverhampton Horticultural Club will be held in August, and that Windsor, or failing that, Trentham, will be the place visited. Members of the Club intend to stage an exhibit of Sweet Peas in conjunction with the Compton Flower Show this year. Mr. W. E. Shrivell, F.L.S., lectured on "Manures" before the club recently. He advised those engaged in horticulture never to use sewage on any vegetable that was eaten raw, such as Celery or Lettuce, for if they did they were liable to spread typhoid fever and diphtheria. Experiments with Celery, the growth of which had been assisted with sewage, had proved that the Celery contained germs from the human body. He found that Watercress was extensively used in the Wolverhampton district, and he thought that before eating it they must have some idea of its origin. Instead of using sewage for vegetables, he recommended 1 oz. of nitrate of soda in a gallon of water, used once or twice per week. Nitrate of soda was a wonderful manure, but it had to be used with discretion.

Variorum.—Lord Gainsborough's head gardener has killed in Exton Park, near Oakham, a fine grass snake, which measured 3 feet 8 inches long, and 4½ inches round its body. * * The highest point an Oak will grow at is 3350 feet. * * At the annual exhibition of spring flowers at Wisbech, the medal for the best Daffodil in the show was awarded to Weardale Perfection, one of the largest and grandest of all Daffodils.

Evesham Flower Show.—Some large prizes are being offered for competition at the horticultural and floral exhibition held in conjunction with the Hereford and Worcestershire Agricultural Society's Show on June 11th, 12th, and 13th. The full list of prizes has now been published, and for these application may be made to the hon. secretary, Mr. Frank Idiens. Further details of the show will be found on our second advertisement page.

Temple Flower Show.—Judging from the large number of entries received, the Temple Show promises to be quite up to its usual standard of excellence. The following well-known amateurs are among the names of intending exhibitors:—Lord Aldenham, vegetables; Lord Hillingdon, Carnations; Lord Rothschild, Moss Roses; Lord Wantage, V.C., K.C.B., fruit; Sir Trevor Lawrenoe, Bart., Orchids; Sir Joseph Pease, Bart., fruit; Sir Fredk. Wigan, Bart., Orchids; Capt. Holford, C.I.E., Hippeastrums; Leopold de Rothschild, Orchids (*Vanda teres*); Alex. Henderson, M.P., fruit and vegetables; John Rutherford, M.P., Orchids; Ludwig Mond, F.R.S., Orchids; R. I. Measres, insectivorous plants; Henry Little, new Orchids; de Barri Crawshay, new Orchids; A. Meyers, *Calceolarias*; P. Parnell, Alpines and *Sempervivums*; Mrs. Hart, Japanese trees.

United Horticultural Benefit and Provident Society.—The monthly committee meeting of this Society was held at the Caledonian Hotel, Adelphi Terrace, Strand, on Monday evening last. The chair was taken at eight o'clock by Mr. C. H. Curtis. The minutes of the last meeting were read and confirmed. Messrs. Pollett's tender for printing agenda forms was accepted; ten new members were elected, and three others nominated. The secretary reported the death of Mr. Michael Davis, and it was resolved that the amount standing to his credit in the books of the Society—viz., £55 0s. 8d., be paid to Mrs. Davis, and that a vote of condolence be also sent her. The sum of 7s. per week from the Benevolent Fund was granted to Mr. H. Saunders (No. 14) until his case demands further consideration. Mr. G. Clinging was granted 10s. per week for three weeks from the Convalescent Fund, for a change of air, in addition to his sick pay. It was resolved that 1000 copies of the rules be estimated for, and submitted to the committee at the next meeting.

Federation of Rural Educationalists.—The friends and supporters of the various agricultural and horticultural societies, colleges, classes, experimental stations, and other institutions engaged in the development of rural education, according to the "Standard," are invited to associate themselves in a federation for organising an annual reunion in combination with an exhibition of flowers, fruit, vegetables, and other produce grown by students and associates. The movement for affording a scientific, technical, and practical training to boys and girls, men and women, connected with rural pursuits, is daily gaining strength and importance. But the various institutions have no federal ties, and the friends who support and govern them have no adequate opportunities of conferring together and comparing notes, exchanging suggestions and experiences. It is proposed to hold a first gathering on August 16th and 17th next, at the Crystal Palace, in connection with the National Co-operative Festival, "One and All" Industrial Flower Show. The show will be opened on Friday, August 16th, and the evening devoted to a social meeting and conference. At this first conference meeting it is proposed to elect a council and permanent officials for carrying on the movement in future years. Suggestions for the constitution of a permanent federation or association will be submitted. Meanwhile, the Countess of Warwick has promised to act as first president, and will attend the August gathering, at which she will offer a trophy to be competed for by the students and associates of the various institutions. The trophy will become the property of the educational institution whose students head the list of awards three years successively. The object aimed at in offering the trophy is the development of *esprit de corps* and co-operative pride in their institutions by the students. The sum of £200 will be required for a prize fund and the initial working expenses, of which amount £73 13s. has already been promised. Those desiring to help the movement are invited to communicate with the hon. sec., Miss Edith Bradley, Lady Warwick Hostel, Reading.

The King at Kew.—On Sunday afternoon the King drove, without escort or formality of any kind, through Kew Gardens on his way to Kew Cottage. The brilliant weather drew an immense concourse of visitors to the gardens, and his Majesty was the subject of a great popular demonstration, the crowd being so great and its enthusiasm so embarrassing, that near the great Palm house the King's carriage was brought to a standstill, while "God Save the King" was sung with extraordinary enthusiasm. As his Majesty departed through the Queen's Gate the loyal outburst was repeated, and was again graciously acknowledged by the King.

Gardens at Railway Stations.—At a meeting of the Nottingham Horticultural Society on the 7th, it was unanimously decided to recognise the efforts made by various railway officials to beautify our railway stations by the cultivation of flowers, &c., in the small gardens under their immediate control. Prizes and certificates of merit will be awarded by the above Society to those producing the best results, to be judged about the middle of August next. The radius will be within twenty miles of Nottingham within the county. Many season ticket-holders and large firms have already expressed a desire to contribute towards the prize fund, as a graceful return for the many courtesies they have received from the officials of the various railway companies in the district. For this purpose a subscription list will be opened for a short time at the Hon. Secretary's, 29, Long Row, Nottingham. We hope other horticultural societies may follow the lead of the Nottingham gardeners.

Narcissus Conference at Dundee.—The Dundee Horticultural Society has arranged to hold minor conferences to consider garden subjects at periods throughout the coming season. On Tuesday, the 7th inst., they discussed the genus *Narcissus*, Mr. D. Croll being chairman. A practical paper prepared by Mr. Richard Cairns, Balruddery, was read by the secretary. This essay contained various points of practical interest regarding such methods of cultivating the flower as were likely to lead to success. The question of the necessity to shade *Narcissus* during the noonday sun, created some discussion. A member remarked that the heat of the midday sun in the month of February was not, as a rule, such as to do much harm to any plant. Views in support of Mr. Cairns' opinion, however, were also put forward, and all appeared to be at one with him in the view that the *Narcissus* showed to best advantage when grown among grass, and that it was advisable to avoid fresh manure in the cultivation of this particular flower. Few or no places are better than Scotland in which to grow *Narcissi*, not even the south of Ireland; and, referring to the commercial side of the question, the same gentleman said there was an increasing demand for the flower from London, and some orders also came from Paris. A lucid description of different species and varieties was furnished by Mr. Storrie (of Storrie & Storrie), whose remarks were illustrated by specimen blooms. He explained that, while in florists' shops *Narcissi* were often ticketed as Lilies, the *Narcissus* was not a Lily, nor did it even belong to the Lily family. In the Lily the seed vessel lies in the petals, while in the *Narcissus* it is beneath them. Several very fine exhibits of spring flowers were on the table, and these were described in succession by the respective exhibiting members, much to the enjoyment and edification of the audience.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901.										
May.										
Sunday .. 5	N.E.	deg. 47.9	deg. 44.2	deg. 59.4	deg. 40.9	Ins. —	deg. 53.2	deg. 51.3	deg. 49.0	deg. 30.8
Monday.. 6	W.N.W.	47.2	44.8	52.9	38.9	0.04	52.9	51.6	49.2	31.0
Tuesday 7	W.N.W.	47.9	43.0	55.6	41.6	0.05	51.5	51.3	49.3	34.5
Wed'sday 8	W.S.W.	42.9	40.5	53.4	41.0	0.03	51.3	51.1	49.5	38.5
Thursday 9	W.N.W.	49.4	47.0	56.3	41.5	0.21	50.9	51.1	49.5	37.5
Friday .. 10	N.	48.1	45.4	55.3	43.9	—	51.0	51.0	49.5	38.0
Saturday 11	W.S.W.	55.1	50.2	61.8	38.5	—	50.8	51.0	49.5	32.5
MEANS ..		48.4	45.0	56.4	40.9	Total 0.33	51.7	51.2	49.4	34.7

A week of cold dull weather with small quantities of rain on four days.

Spring Flowers.

THE first rush of spring flowers is over; the Cyclamens, Snowdrops, the early flowering Anemones, Chionodoxas, Scillas, and Aconite have done their best to gladden us in the opening days of the year, but to one who has passed the fourscore years there is an element of sadness in all this. I am no pessimist, but am rather inclined to take a hopeful view of things, but one cannot help asking, Shall I ever see these plants flower again? Of course, you will say this is a question we may always ask; true, but it becomes more impressive as years roll on. And now "that the spring has set in with its usual severity," we are endeavouring to comfort ourselves, in the midst of hot suns and biting easterly winds, with such flowers as follow immediately after these first messengers of warmer weather, and unquestionably the first place must be given to the Daffodil—a flower which has come so much into favour of late years.

Daffodils.

Of these there are a great many, perhaps too many, varieties, commencing with those early flowering ones minor and minimus, and going on to the more stately forms of the beautiful trumpet varieties, of which we have such grand and striking examples. Of these perhaps the most conspicuous are the Horsefieldi section, and I think it would be very difficult to find anything more imposing than those two grand sorts, Emperor and Empress, which are now cultivated wherever the Narcissus finds a home. Although many of the varieties are much like one another, yet they vary as to their times of flowering, so that their blooming season is much prolonged. The ordinary form of what we call Lent Lilies, and which come amongst the early flowering ones, have been very bright in the small grass paddock in the front of my house. They have spread considerably during the last twenty years, and now the pretty and very distinct variety Narcissus poeticus is coming into flower, and will remain with us another fortnight or three weeks.

Fritillarias.

The Fritillarias are now also in full flower, and as a native plant they are very acceptable. They do not grow wild amongst us here in Kent, but in Oxfordshire, Berkshire, and other counties they are very abundant. I think the white one is the most pleasing of them all, and I received some roots of it from my friend, Mr. Strange of Aldermaston, some years ago, which now give me an ample crop of bloom. They are so easy of cultivation that I wonder they are not more generally found in gardens; they grow almost anywhere, and require but little care and attention. Those which we know as Crown Imperial are in full flower now, and both the yellow and red varieties are sure to attract attention. There is also another which is intermediate between the Crown Imperial and low-growing Fritillarias, *Fritillaria pallidiflora*. I have had this for some years on one of my rockeries, but I do not find that it increases. It only throws up one stem with a couple of blooms on it about 18 inches high, and of a pale yellow colour.

Auriculas.

Amongst those flowers which attract horticulturists at this season is one around which my earliest associations cluster. I mean the Auricula, and I grieve very much to find that the Southern Show this year was of so limited a character; in fact, I believe that it was the smallest the society has ever held, and some of the blooms showed symptoms of having been subjected to forcing, still there were some things worth noting in it. Several new varieties have been brought forward; thus in Mr. Douglas' collection there was Abraham Barker, a new green edge, which came from the North, and belongs perhaps to the most attractive class of the edged flowers. Then there was Mrs. Henwood, bearing a name much honoured among Auricula zealots; this also is a very fine green edge. I saw it in flower two or three years ago, and it then struck me as a valuable addition. Monarch, I also recollect seeing some years ago; but Zola I have not seen. In grey edges George Lightbody still holds the field; and in white edges Magpie begins to make its appearance. It was raised some years ago by the Rev. F. D. Horner, but the Auricula increases so slowly that these newer kinds take a long time before they come into general cultivation.

Auricula virtuosos.

I cannot mention the Auricula without referring to the lamented death of my late friend, Miss Woodhead. I went to see her and her brother many years ago at Shibden Head, near Halifax, where he had commenced the most careful hybridisation of the Auricula, and though for only a short time engaged in it, he produced some flowers which were almost always to be found in winning stands—these were Rachel, Mrs. Dodwell, George Rudd, and Black Bess; they are to be

found this year amongst the winning flowers. After Mr. Woodhead's death his sister removed to Hipperholme, a more accessible place, where she continued successfully to follow up the cultivation of the flower, which she did quite as much because she cherished the memory of her brother, to whom she was much attached, as she did for the love of the flower itself—and so one after another the cultivators of our favourite flowers pass away; but there are still some left among us. The Rev. F. D. Horner, the *facile princeps* of amateur Auricula growers, still continues to cultivate and exhibit, I believe; also, Ben Simonite, whose name is cherished by those who regard the efforts of this sincere and honest grower, who, amidst great difficulties amidst the smoke and dirt of a large manufacturing town, grows and exhibits successfully the flower he loves so much.

Spring Prospects.

Trillium grandiflorum is another flower which is conspicuous in the rockery, but not so much so as I could wish; our climate and soil are both too dry for it, and I am told it flourishes most in damp places and in woods. And now, of course, we shall be looking forward, in Kent especially, for the glorious profusion of fruit blossoms, with which our orchards will be presently covered. Already the Pears and Cherries are showing, and the trees seem to be full of bloom; but of course the prospect of the fruit crop depends entirely upon the character of next month. We had such an abundant crop of fruit last year that we can hardly anticipate a repetition of it. There are, of course, a number of things showing themselves, such as *Lilium testaceum*, *L. candidum*, *L. Browni*, which are rapidly pushing up; the Ostrowskias and Eremuri look strong, and I hope will gladden me with their flowers by-and-by. Roses have as yet made hardly any growth, and are very backward; but if on account of this we are saved from the destructive frosts of the last week in May, we shall not mind their lagging behind.—D., Deal.

Blossom in Spring.

AT this season of the year, when gardens are burdened in every corner with the blossom of Apple and Pear trees, Bird Cherries, Lilacs, Laburnums, and white and crimson Hawthorn, it does not require an effort of imagination to picture to the mind the beauty of such a scene as that which we illustrate on the opposite page. Here we have the free and graceful, albeit magnificently beautiful, style of pure English gardening. "The Hawthorn's hoar" and "the fragrant Birch" may be implied as lending their respective qualities and characteristics here, while the attractions of running water, and the other features easy to detect, are all of them valuable for effect in garden designing. At Kew the planting of *Pyrus Malus floribunda*, and other varieties of the Apple, in front of a back range of dark Conifers, has been successful, and has in certain instances added characteristically beautiful features to these gardens in springtime.

Edenhall, Cumberland.

THIS fine place has been previously described in the pages of the *Journal of Horticulture*, yet a visit at any time of the year is full of interest. Since my last visit, over two years ago, much improvement has taken place in the gardens under the able direction of Mr. Smith. A Rose garden was made, shortly after my last visit, at the southern end of the flower garden, in which over a thousand Roses were planted, and are now flourishing. This, in many places, would not be a great undertaking, but here the natural soil is not suitable to the growth of the Rose, so that the surface tilth had to be removed to the depth of several feet and fresh and more adhesive soil brought from a distance. The garden is laid out on turf, the Roses being planted in oval and oblong beds. At the southern end are pillars and chains, against which are planted the varieties Carmine Pillar, Crimson Rambler, and Bouquet d'Or. Near by are the famous Cedars of Lebanon, twin trees, whose circumference at 5 feet from the ground is 27 feet 7 inches, and 27 feet 5 inches respectively—two of the largest examples in the country. *Ampelopsis Veitchi* was planted against the columns of the portico of the house by Mr. Smith six

years ago, and now cover with a network the columns and walls of this portion of the house, and in autumn light up with fiery red the white stone.

In the kitchen gardens Broccoli was looking well, also a good breadth of winter Spinach. Raspberries do well in these gardens, and make fine clean canes. On a west wall cordon Pears and young Plums were clean and healthy, and since my last visit a fruit-room has been erected, also a Mushroom house, whilst the large stove has been re-roofed again, a range of four Melon houses have been heightened and converted into lighter and better houses for plant growth, and a range of four span-roofed plant houses have also been re-roofed; in fact the whole of the glass is in the best possible condition, and a contrast to what is seen in many gardens of note. The early Peach house had set an excellent crop, whilst the second

times annually, and are of the simplest culture. *Primula stellata*, a large batch of which was in full beauty, along with *Cineraria stellata*, *Spiræas*, *Azalea mollis*, *Lachenalias*, and *Freesias*, all in fine flower, were seen in other houses.

Malmaison Carnations, about 300 plants in the best of health, fifty of which were in 8-inch pots with six and seven shoots each. A few tree Carnations are also well grown; *Calanthes* have been good, also *Clerodendron fallax* as large and small plants. Amongst other subjects grown in good batches at Edenhall are *Poinsettias*, *Zonal Pelargoniums* (for winter); *Begonia Gloire de Lorraine* and *B. Gloire de Sceaux*, together with *Acalypha hispida*, is largely grown during summer. There are many fine-foliaged plants, *Codiaeums*, *Dracæna Sanderiana*, *Pandanus*, and *Panax Victoræ*; also good batches of *Lilium Harrisii*, *L. longiflorum*, *L. auratum*, *L. lancifolium* Kraetzeri, *L. lancifolium rubrum*.



BLOSSOM IN SPRING.

was showing an abundant crop of bloom. In the Fig house Brown Turkey and White Marseilles were swelling a good first crop. The early vinery was nearly in flower. In this house is a cane of Lady Hastings also in bearing. The Muscat house was starting well. Strawberries in pots are largely grown. Cucumbers were seen in three houses, very sturdy healthy plants. Tomatoes established in 5-inch pots were good plants. Melons in small pots were also advancing.

Hybrid *Hippeastrums*, several hundreds of which are grown, and there were some dozens of fine flower spikes. In the *Gardenia* house the plants were in robust health, full of flower buds. Above a hundred plants of *Primula obconica* were noticed in 3½ and 5-inch pots, and many pans in which three plants had been placed; all were excellent plants, and full of flower. *Cyrtanthus Mackayi* were represented by several plants in small pots, with three or four spikes of orange scarlet flowers each. These, Mr. Smith says, flower several

Violets are well cultivated, and are in great demand at Edenhall, and when I saw them they were full of large, fine flowers, the favoured varieties being Marie Louise and Californian. The large greenhouse was full of bloom. A good batch of Callas was observed; while in the greenhouse there is also a fine plant of *Dasyliion acrotrichum*, with many large Myrtles, *Laurustinus*, and Japanese Maples in tubs and pots.

The Palm house is full of large and small Palms in variety, with Bamboos for house decoration. In the large stove is as fine a collection of *Anthuriums* as could be seen in any garden, and the healthy vigour and almost constant flowering denotes that their culture is well understood. *Eucharis amazonica* is also a feature of this place, and at the time of my visit scores of flower spikes were seen. Several plants of *Vriesia hieroglyphica* were in flower. Bedding plants, both in frames and houses, looked well. *Calceolaria amplexicaulis* and *Veronica imperialis variegata* are largely grown for bedding.—F. STREET.



Gerbera Jamesoni.—A leading American florist paper has been asked by one of its correspondents to make the announcement that he has no stock of this plant for sale, and does not know from whom it can be procured in America. It is obtainable from European dealers in hardy plants. During the last few Drill Hall meetings some beautiful plants of *Gerbera Jamesoni* have been exhibited.

Florida Wild Flowers.—Florida is regarded as the land of flowers. This fact gave origin to the name of the State. But there is nothing so handsome but can be made more beautiful. A correspondent to "Meehans' Monthly," under the date of April 15th, writes that the pretty wild flower of Texas, the Drummond Phlox, has become abundantly naturalised in the State, and that the many shades of colour we find in gardens follow them as they extend their territory. The effect of this as an early spring wild flower is described as charming.

Tropæolum Sunlight.—What many a show group of foliage and flowering plants stands in need of is a subject at once light, brilliant, and graceful. *Tropæolum Sunlight* is a plant that produces a profusion of deep golden yellow flowers on long curving stalks, and can be trained in a pyramidal form, in which shape the upper laterals droop, and display to the fullest the beauty of the foliage and flowers. There is at Ryecroft a considerable number of plants in one of the houses, and these at present are indeed charming. It is an easily grown plant, and very amenable to culture in pots.

Propagation of Hyacinths from Bulbils.—The method of propagation is very interesting. It was discovered, so the story runs, by an accident, and was due to the depredations of marauding mice. A Dutch farmer found that some of his bulbs had been attacked by mice, which had nibbled away the centre of the bottom of the bulb around which the roots grow. This, it might have been apprehended, would have irretrievably damaged the bulbs, but instead of that it was found that around the injured spot some twenty or thirty new baby bulbs had begun to form. The accident set up a train of thought, which led to the adoption of new methods. The central part within the bulb's ring of roots is now cut away, and the bulb is left for a time in the sun. Then it is planted out, and in due time the little bulbs begin to appear. They feed upon the devoted parent until they have practically consumed it, but in sacrificing the head of the family the farmer secures a score or two of its offsprings, whose bringing up is now his next care. For six or seven long years he must tend them. Every year they are planted in fresh ground carefully prepared, so that every one of their needs may be supplied, and at last there comes the time when they bloom in perfection and are picked from the soil for the storeroom.

Artificial Pollination of Carnations.—An account is given in "Garter flora" of cross-pollinating *Dianthus chinensis* with the pollen of *D. Caryophyllus* for the purpose of combining the vigorous growing habit and strong stems of the first with the rich colour and odour of the latter. Incidentally pollen from *D. barbatus* and *D. plumarius* was also used to fertilise the Chinese Carnation. The pollen of *D. barbatus* was effective, and seventy good seeds were obtained; but that of *D. plumarius* exerted no influence whatever. Some 100 seeds were obtained when *D. chinensis* was pollinated by *D. Caryophyllus*. These were sown. None of the resulting Carnations were alike in type, form, or leaf formation. Out of sixty blossoms only three were well filled. Ten of the more promising plants were set in pots, pollinated with *D. Caryophyllus*, and the seed harvested in the fall. This seed, when sown the following spring, produced plants which blossomed at intervals between June 1st and September 30th. Selected plants were again pollinated with *D. Caryophyllus* and the operation repeated three times. The result of the experiment at the end of six years is a plant which blossoms earlier than *D. Caryophyllus* and has a stronger stem. It is believed that after a few years this strain can be so fixed as to come true to seed. The experiment is further believed to show that it requires at least ten years before satisfactory results can be obtained in cross-pollinating Carnations.

Aralia spinosa.—Of the large ornamental shrubs there are few more ungainly in their winter aspect than Heracles' Club, *Aralia spinosa*. They look like curious walking canes prepared for giants, and driven into the ground without order or system, but when in leaf and flower they are delightful, and especially in flowering time. The huge masses of white flowers have a slightly rosy tint, and attract the attention of even the most callous to the charms of Nature.

A Botanical Problem.—It is impossible for man to say why the Maple tree and Sugar cane have so much sweeter sap than other plants. One can as easily explain the superabundance of cow's milk. The creature does not need for itself or its offspring so great an excess, and man gets the benefit of the overproduction. These and other phenomena are controlled by the mysterious law of heredity, which imperatively compels the Oak to shape its leaves after one pattern and the Locust by another, but without vouchsafing any reason why.

"Don'ts" for Grape-thinners.—Don't (1) work with dirty scissors, (2) rub the berries with the head, nor (3) thin through the bunch; rather thin on the outside and have less accidents and no dirty berries. Don't open the scissor-blades more than necessary, as other berries that are required in the formation of the bunch are apt by mistake to be taken out. Don't commence thinning from the top of bunch, but work up from base, and never hold the scissors loosely, but grip firmly and insure steadiness. Don't leave a lot of inside berries, as these are only crowded in and soon (when ripe) decay, and cause the loss of the whole bunch.—W. H. R.

The Lawson Carnation.—Writing to an American contemporary, a correspondent refers to Carnation Mrs. Thomas W. Lawson thus:—"Mrs. Lawson is an early and, by reason of its exceptional vitality, continuous bloomer, throwing up its growths in rapid succession, so that it comes as near being continuous as any variety yet produced. Its productiveness is wonderful considering the quality of the flower, and to stimulate this a liberal supply of nourishment is necessary. I find an occasional top-dressing of pulverised sheep manure every two weeks suits the plants admirably, commencing to give the applications early in November, and continuing them all through the winter and spring season. Should the soil appear to be overfed or soon withhold the sheep manure, and substitute a good dusting of air-slaked lime."

Prunes versus Oatmeal.—In an editorial on rearing children, a Philadelphia newspaper recently contained the expressions:—"More especially they were not to be 'pampered' with delicate food, and as the Queen's children learned to eat oatmeal, nearly all the children of the British Islands and many in America were put upon a diet which a ploughman can digest, but which has made three-fifths of the Scotch life-long dyspeptics. A minority thrive under this treatment, as it would under any; the majority either were weakened for life, or went early to swell the bills of mortality. Prunes are the correct breakfast food. Think it over. Farmers are beginning to rig up the reapers and mowers ready for the opening crop of hay, for it is surely going to come. In a water famine you do not get the fruit; but in a car famine you get it, and wish you had not." We read, however, in the same paper that "Prune trees are very poor selling with nurserymen this year," which perhaps affords a reason why good oatmeal is condemned in favour of Prunes.

Lack of Colour in Purple-Leaved Trees.—It is not generally known that trees and shrubs with purple coloured leaves are rarely of as good a colour the season succeeding a planting as they are before and after it. There is something in the transplanting which lessens the colour. This is notably the case with the blood-leaved Beech, the Japan blood Maple, the purple Filbert, and like kinds. It is not at all exceptional for nurserymen to be berated, as Joseph Meehan says in "The Florists' Exchange," by customers who believe they have been imposed on, and have received something of an inferior colour. The best type of purple Beech will be of no better colour than the copper Beech, and only when full confidence exists will customers be satisfied that they possess the real thing. After the tree recovers from its transplanting the usual colour returns to its foliage. There is much to be discovered concerning the colouring of leaves. In the cases mentioned, injury to them in transplanting lessens the intensity of colour, but what is called autumn colouring is increased by injuring the branches. Take a red Maple, scarlet Oak, or anything that colours brightly in autumn, and injure a branch, and the foliage on that branch will be much more brilliant than seen on any other part of the tree.



Cider Apples.

A SUBJECT not often touched upon in the *Journal of Horticulture*, but which might interest some readers, is a notice of cider Apples. For instance, there have been many Norman-French sorts introduced by the nurseries, among them being Argile Grise, Bramtot, Baden-de-Paris, Medaille d'Or, Rouge Brngese, and an analysis of the juice is given in the "Herefordshire Pomona," published in 1886. These Apples, when grown in France, seem to possess great qualities for making cider. Now, a question that would interest many is, Whether the juice of these Apples analysed as well when grown in Herefordshire as when grown in Normandy?—CONSTANT SUBSCRIBER.

Pear Easter Beurré.

I AM greatly interested in most matters discussed in the *Journal of Horticulture*, and for some time I have paid particular notice to the various notes on late keeping Pears, and have been surprised that Easter Beurré has been passed over. One writer stated that Easter Beurré is a misleading title, and if named Christmas Benrré would convey a truer tale. This is hardly correct, as I am now, April 23rd, enclosing two fruits for the Editor's inspection. This tree produced a large crop of fruit last year, and, what is rather strange for so late a variety, it is now literally covered with expanded blossoms.—W. B.

[The fruits were very fair indeed; a trifle shrivelled, and somewhat lacking in "sugariness," but still good eating samples for present-time home-grown Pears. The variety was raised in France, and is known under twenty French synonyms. It is certainly a dessert Pear of the highest merit, and is known to all cultivators.—Ed.]

Early Potatoes.

"W. B.'s" friendly and most reasonable criticism of my Potato notes was very pleasant to me. Indeed, that is why I like this "our reader's page" almost the best in the *Journal*, except for the murderously combative appearance of the illustrative characters at the top. We none of us want to slash and slay those whom we contend with; our profession is more peaceful than that. All we desire is to get at the truth of a thing. That is "W. B.'s" contention. You are right, "W. B.," very few of us have too much ground for the demands made upon us. That is my case exactly, for—and I ought to have brought this out more forcibly than I did—the large distance of the rows apart is due to the fact that the whole of my early and second early Potato ground has to carry a second crop in the shape of Cauliflowers, Brussels Sprouts, Broccoli, Winter Greens, &c.; therefore the second early and main crop of Potatoes all get 3 feet—and indeed 3 feet 6 inches would not be too much in growing seasons—between the rows, and the smaller topped ones 2 feet and 2 feet 6 inches; "W. B." and I therefore agree in this as well as on other points. Magnums and Up-to-Dates are grown on the farm, and do not come under my management, though it often appears to me that a little more room between the rows there would be an improvement, only farm land does not run them to top so much as the richer and more deeply cultivated garden ground does.—N. H. P.

Scarcity of Journeyman Gardeners.

I SHOULD like to have a word or two with "H. G. C." respecting his article on page 373. I cannot altogether agree with him, especially when he coolly remarks, If we want more wages we must throw up the profession, and seek something with better remuneration. No, "H. G. C.," I am afraid your suggestion will meet with very little approval, or at least from those of us who have spent the greater part of our lives at it. I, for one, do not feel at all disposed to throw it up without making an effort to ascertain if there is not a means of improving our pay. I do not at all relish wasting fifteen years of hard work and study, and taking up something else, of which I know nothing, nor am interested in. I feel sure there are many, like myself, that have a love for the craft, and who think as I do, and earnestly welcome a suggestion more worthy of our profession than to turn tail. I am of opinion, if the head gardeners would amalgamate, and take up the subject in real earnest, and approach their respective employers, the time is not far off when we shall be advancing with the rest of the working community. Just a few words more, in conclusion. Let each one of us do what we can to improve our respective lots; but, above all, let us stick to our guns, like Britons. I feel quite convinced some day we shall be reaping the benefit.—G. H. COOK.

A Problem in Heating Solved.

IN your issue of May 2nd, page 378, is an article under the above heading by "H. D." I would assure him that although his discovery may be new to him, and that Mr. T. Marsh may think he has adopted a new plan, that it is a plan which has been tried, alas! many, many times, and has always signally failed. The result has been that an alteration has had to be effected before the heating has been satisfactory. If Mr. T. Marsh had not put in the two air taps he could not even have filled the pipes, but for the water to circulate down one side and up the other it never will. Perhaps with very great boiler power, sufficient to boil the water, he may succeed in forcing it through, but that is not circulation, and I should not like to be responsible for the heating. My advice to anyone engaged in hot-water heating is not to adopt it if he wants a satisfactorily heated house.—AQUA.

A Horticultural Hall.

THE meeting at the Drill Hall on the 7th inst. was one of the best I have seen there, packed from one end of the building to the other with groups of beautiful plants, embracing all the floral gems of spring, both indoors and out. Hardy plants, Roses, greenhouse florists' flowers, and Orchids were there in great variety, and a fine collection of Apples from a well-known firm, all went to show what a lively interest is taken in one of the healthiest and pleasantest occupations of the present age. The one thing that struck me most about this show was what a miserable place to hold it in, dingy and cold-looking, with no accommodation, or room enough to hold the plants, two of the collections having to be staged behind the scene, or that end of the building which is curtained off for the use of the committees, and one of these had to sit and do business in the body of hall. With these facts before us the thought crossed my mind, Surely it is time we had the horticultural hall, of which we heard a good deal some time ago, but which seems to be almost forgotten now. Judging from the fact that this meeting was a truly representative one, being attended by all classes interested in horticulture, it is surprising that the finest city in the world, with a population of four and a half millions of people, has not got a better place to offer the R.H.S. wherein to hold its flower shows and meetings.—VISITOR.

Young Gardeners' Pay.

I AM glad to see that a word or two from "An Old Boy" (words wisely spoken) has put this vexed question to rights. The first mention of the matter was the grievance of young men from eighteen to twenty-two years of age, who were only getting from 14s. to 18s. per week with bothy. To me the idea was outrageous. Here were young men learning one of the finest professions in the world, and grumbling at pay like this! Let me tell my experience. My son, eighteen years old, is in the fitting shop of certain steel works. He has received a public school education, and is, I believe, a lad of intelligence. His wages are 7s. 6d. per week; hours 6 A.M. to 5.30 P.M. (ten minutes late means docked pay). He can be called upon to work Sundays, holidays, or overtime. He worked the other day from Friday at 6 A.M. till noon Saturday, and not among pleasant surroundings. He has to do far dirtier work than any gardener (worse than stoking), and has no lodgings provided. The pay for overtime is not likely to make him independent soon. Just compare a young gardener's lot with his; I, at least, know who has the best of it. It makes me vexed to hear of such purely imaginary grievances. I cannot, for the life of me, see under what circumstances the khaki gentleman gets better paid; the Army is not generally the road to affluence. My son is expected to attend classes for instruction in machine construction at least two nights a week, and three nights are taken up in preparation.—F.

Grape Gros Maroc.

YOUR correspondent, "R. M.," on page 395, asks, Is Grape Gros Maroc worth growing? Yes; to the exhibitor of Grapes it is indispensable. The large berries and bunches, and the deep bloom these invariably carry, secure for the Grape a place amongst the best black varieties for exhibition. This is proved every year by its being shown so largely both in collection and single dish at the Crystal Palace and other large fruit shows, but is not worth growing to the small cultivator for home consumption only, if he excludes Black Hamburgh, Madresfield Court, Black Alicante, Appley Towers, or Gros Colman to give Gros Maroc a place, all of which are before Gros Maroc in flavour and keeping qualities, with the exception of Madresfield Court, which is not a late keeping Grape. Gros Maroc cannot be kept after November 1st without shrivelling, despite its thick skin, whereas the other varieties named can be had in good condition at Christmas. With me it is a free bearer, being pruned on the spur system, but is a Vine that requires much space; 2 feet each side of the main rod is not too great, it having the largest leaves of any Vine I grow. As this is only "R. M.'s" first experience of it, I would advise him to give it another trial, keeping the laterals well stopped and fully exposed

to the sun to ripen the wood, and at pruning time not to prune too hard. If unsuccessful another season inarch it with any of the varieties named.—WM. TAYLOR, *Tewkesbury Lodge Gardens*.

"R. M." page 395, of May 9th, asks, "Is this variety worth growing?" Now that depends entirely on circumstances. If "R. M." wants a Grape to eat, or for his employer to eat (who may be fastidious as to flavour), I should say No, it is not; but there are circumstances under which it may be quite worth growing. It will do well in a Black Hamburgh house, will ripen at the same time, and is a fine, plumping, handsome-looking Grape that will fetch 6d. a pound more than the Black Hamburghs. It is not a keeper, but will be in use before Gros Colman. I find if close spurred, as you would Black Hamburghs, it is a shy fruiter; but grown long, plenty of bunches will be the result. If "R. M." is particular as to flavour, he should not grow it, but could use it as a stock on which to inarch its neighbours.—JOHN KITLEY.

A Schedule Blunder.

MR. IGGULDEN, page 366, appears to have awakened from his lethargic sleep, as a veritable Rip Van Winkle, otherwise he would have discovered his "mare's nest" years ago, when those varieties of Grapes which he takes objection to in their arrangement, and which "for this competition" first appeared in the Shrewsbury schedule. Although I personally was not the instigator of thus classifying these disputed varieties, I must say that I do fully concur with the scheduled arrangement, for doubtless it was deliberately and accurately considered that any one of the Muscat tribe was ample or sufficient where only, or not less than, four varieties were asked for in this competition (mark this stipulation, as these words contain the grit or pith of my contention); therefore no injustice is done to any exhibitor in this interesting and popular Grape class, for surely there is plenty of other varieties to select the remaining eight bunches from after confining the class to any one of the white Muscat varieties. The schedule does not claim or state Bowood Muscat, Tynningham Muscat, Charlesworth Tokay, and Canon Hall Muscat to be synonymous; simply says for this competition they will not be admitted as distinct varieties, which is a distinction and a difference. All those who have the noble Canon Hall in good form can display the same in plenty of other eligible classes. I, therefore, deny that Mr. Iggulden's dictum is any blunder in the Shrewsbury schedule.—W. CRUMP, *Madresfield Court*.

Gadding and Gathering.

"HERE AWA', THERE AWA'."

Swanley Horticultural College.

DURING its few years of existence the college at Swanley, in Kent, which purports to train middle-class young ladies and gentlemen in the art of gardening, has been quite as successful as the directors could wish or expect. At present there are ninety-one students, and I was told, when on a recent visit to this establishment, that many applicants had to be refused. Mr. M. Eason Wilkinson, B.A., is the resident Principal, and his rule is not to accept any students unless they render a promise to be willing workers. Furthermore, he does not wish to have more students than he can find constant employment for. The present range of plant houses for the most part contain Tomatoes, Carnations, Cucumbers, Melons, Ferns of the usual marketable sorts, and include peacheries and vineries. Mr. Wilkinson, however, has arranged for the addition of a large central conservatory, a span-roofed propagating pit, and three other similar houses, 30 feet in length, for greenhouse and stove plants. The total cost will be about £1000, and the contract is being enacted by Messrs. Richardson and Co., of Darlington.

Once these houses are erected and put in order Swanley Horticultural College will assume an air of some importance. At the time of my visit (fully three weeks ago) active preparation was being made toward having Cucumbers, Tomatoes, with Vegetable Marrows and other early vegetables, ready for the Temple Show. As a rule the College folks do themselves credit at horticultural exhibitions. The bulk of the students are girls and young women. Many of these are undergoing the training simply that they may be enabled to garden well when they go to their own homes again; others accept the two years' probationship because they are, in the first instance, in delicate health, and thus resort to outdoor recreative employment to gain strength and grace; while yet others are in hopes of making a living, either in market establishments of their own or other people's, or as professional gardeners in private places. Each student has a plot of ground—called, out of respect, a garden—which is kept in order and planted according to the individuality of the owner. I believe prizes are offered to encourage taste, skill, and care. The grounds are very extensive, and varied in proportion. Nut bushes are largely grown, and bear handsomely. These have all been pruned during the last winter, the centres of each having been radically thinned out and opened to the light. The leading shoots have also been pruned back. All the

standard Apple and Damson trees in the large upper orchards have had their trunks coated with limewash to eradicate and prevent Lichen. Bush fruits were very promising, although I smiled when the Principal naïvely hinted that the Black Currant bushes had extra large buds, and were promising a bumper yield. Yes, there is a certain little mite—too well known to fruit growers—whose presence in the Black Currant buds is only too easily detectable in gardens all over the land. Burning the bushes, rump and stock, is the only cure.

Floral Decorations.

A large share of the work done in many large and small gardens is spent in floral decorations and designs. As an instalment to the few notes written under this head by me a few weeks ago, the following, which describes what was seen in the Regent Street florists' windows last week, may be of interest. Those whose business it is to day and daily study, invent, and arrange new floral contrasts or harmonies, must certainly be superior in the handling of their articles, and in the production of good effects, compared with the person whose practice and scope is much more limited. At the present time scarlet, blue, and the unchallengeable white, are colours most in evidence. In one of the shops I was particularly pleased with the effect of an upright pillar, such as one might erect or find in drawing-rooms or reception halls. This was completely veiled by a well executed arrangement of Anthurium spathes, different varieties being used, so that the deep crimson spathes aided the effect of the lighter coloured ones. Here and there adown the pillar on all its sides were the rich pendant racemes of Dendrobium thyrsiflorum, while out-jutting sprays of beautiful Odontoglossum crispum, and a continuous winding coil of Asparagus Sprengeri, together formed an admirable, rich, and satisfying floral feature. To emulate such arrangements as that I admit is beyond the means of any but the most well favoured gardener.

Here is another design, which, however, is in keeping with what can be afforded by the less affluent, and yet would grace a "marble hall." It consisted simply of a tall glass vase, having a slender tube and wide open mouth. The pure white flowers of Lilium Harrisii on long stalks shot up high from the centre; then came a loose, spreading mass of purple and of white Lilac, while tumbling in negligent sprays over the rim of the vase was Berberis Darwini. It might be thought that three such subjects used together would appear incongruous, but the effect was far from being odd; it was charming. It may be timely to add here, that when these tall glasses, with their slender bases, are used, the utmost care and consideration must govern the filling and the handling of them. They are exceedingly brittle, and break with the least snap. I have seen one of the vases, costing £2, spoilt by rough handling; and another thing to mind is, that you do not attempt to squeeze too many stalks into the mouth, else the glass will burst. A smaller glass vase was filled with deep double crimson trusses of a variety of Zonal Pelargonium, Anthurium spathes, and Asparagus Sprengeri.

In the way of circular wreaths there was one very pretty design, composed of sweet blue Myosotis (Forget-me-not). The latter was used evenly all round the frame of the wreath, without any relieving greenery, but a bouquet or bunch of wired Stephanotis blooms and Lilium Harrisii was posed at one part of the circumference. This, I thought, was very pretty. Then, again, on a cross, having a grounding of grey Iceland or Siberian Moss (Lichen), a handsome sprightly bunch of long-stalked Violets, Lily of the Valley, and blue Spanish Irises, with Adiantum fronds, was pinioned just at the juncture where the cross pieces diverge at right angles. In another floral cross, blue Muscari spikes were used, along with Lily of the Valley. Fancy Pelargoniums having a large proportion of mauve-heliotrope or royal-purple in their blooms are used along with Cattleya flowers in other wreaths. These coloured wreaths are much more beautiful and interesting than those composed of purely white flowers.

In oblong baskets, draped in a peculiar green bast material, were bold showers of Cytisus præcox and golden coloured Spanish Irises; looped ribbon to harmonise was also effectively employed. Rose Mrs. J. Laing, Erica hyemalis, and Ferns were placed together in a raised tray box.

Tulips.

Probably no larger or finer collection of Tulips can be seen anywhere in the neighbourhood of London than that of Messrs. Barr and Sons, in their grounds at Long Ditton, Surbiton. The beautiful Narcissi naturally cover a far greater amount of space in the Long Ditton grounds, but any Tulip fancier at the present time would find enough to satisfy his quest for at least the period of one afternoon. Those who cannot visit and see the growing plants may be fortunate enough to view, at the Temple Show next week, what I expect will be one of the largest collections of cut Tulip flowers that this firm has ever staged. The Tulip as a spring flower has degenerated from the position it once could boast of. The days are long past in which 2000 up to 5000 florins were paid for a single bulb; yet everybody admires these stately members of a showy genus. Our illustration represents two varieties of florists', or English Tulips, the well-known and exquisitely beautiful Tulipa elegans alba (syn. Picotee), having a neat, bright rosy edge to the white petals. The two topmost blooms are those of the variety Czar Nicholas, which is perhaps not quite so popular as the other. The true florists' section of Tulips, however, are not quite so extensively cultivated as the early flowering Dutch varieties, and recently the Darwin Tulips have taken a prominent

lead in nurseries and gardens. A notice of the latter must be deferred, but before the early Tulips have faded for the season a short selection of these may be useful. There are none to excel Artus, whose glowing scarlet crimson colour is exceedingly rich when viewed in broad masses. Von Vondel, white, has an exquisitely moulded flower, true to the fancier's strictest ideals. Golden Lion is indeed a golden lion, writing in the metaphorical sense; and for a pale yellow I would recommend Primrose Queen. The inside colour is a deeper yellow or

flowers, is rose-pink; and the grand old Cottage Maid (which everybody grows, because they cannot find a better), with its lovely rosy pink, shading to cream, may be mentioned amongst first-rate single Tulips. The Messrs. Barr include Queen Emma (brilliant rose) as one of their new double varieties. William III. is also new and double, of a glowing vermilion shade, which received an award of merit recently; Enchantress, also double, has a spotless white base and rosy crimson edge, a delightful early Tulip; La Grandesse furnishes a rosy blush



TULIPS CZAR NICHOLAS (TOP), ELEGANS ALBA.

primrose than appears on the outside. Prince of Austria has become a favourite on account of its distinctive deep apricot colour; and Couleur Cardinal also follows the pattern of the last named. Two grander Tulips—grand in the sense of being richly coloured, bold in form and large sized—than these latter can hardly be chosen.

A good white variety is afforded in that named Royal White, while Goldflake is another very brilliant yellow, though few of the latter colour can beat the charming Mon Tresor. L'Immaculée grows 6 inches in height, and produces a lovely white flower; Couleur Cramoisie is crimson; Admiral Reynierse, with large goblet-shaped

double variety, with splendidly massive blooms. I would say that few Tulips excel this one. Glowing crimson is provided by the double Rex rubrorum, while yellow is the colour of Yellow Rose. Murillo is fairly well known, and where it is absent in gardens there can be no other reason than that the owners thereof have never seen its lovely rose and white double blooms. Salvator rosa, deep rose; Vuurbaak, bright scarlet; Tonnesol, yellow; Couronne d'Or, deep glowing yellow; El Toreador, reddish brown and orange; and lastly Rosine, white tinged with rose, are a few of the finest double, whose full worth cannot here be described.—WANDERING WILLIE.



Seasonable Notes.

It is at this season that Chrysanthemums require particularly close attention. Sunny days and drying winds, with consequent rapid evaporation of moisture from the soil, cause rapid drying. If the plants remain dry long they lose many of their bottom leaves, and others turn yellow, thus becoming useless. Attention must, therefore, be given at various times of the day, so as to maintain the plants in the best possible condition. Early morning sun soon extracts the moisture from the pots, consequently look over them early, and again during the course of the forenoon, at, or soon after, midday, and towards evening. It is evident they will not all require water at the same time, and this is why frequent attention is necessary, and especially for plants in small pots. The difference in the rooting power and strength of the individual plants or varieties accounts for this. Moreover, the pots should stand on a moist base—coal ashes is the best material—and should not stand too closely together, which facilitates watering, and insures a freer circulation of light and air. Place a light stake to each plant in order to keep the growth straight. If mildew is showing, dust the leaves or stems on which it appears with flowers of sulphur. Green fly can generally be checked by tobacco powder or syringing with an insecticide, laying the plants on their sides. This pest is usually troublesome in the points of the shoots. Small caterpillars may also be found now or later on, binding leaves together with a web. These should be picked out and destroyed. The cuckoo spit insect, too, is unsightly, but is readily located and removed.

Pinching, or taking out the points of plants to induce an earlier break, and thus secure blooms at the proper time for the shows, is an operation which is carried out chiefly in April and May. Among those varieties which may be pinched now are the following new Japanese varieties:—Mrs. Tom Coles, Madame Von André, Mrs. A. Kerbey, Mrs. W. Morgan, C. Arthur Pearson, W. Adams, Rivers H. Langton, Mrs. I. C. Waterhouse, and Mrs. A. H. Hall. When the plants break into growth, select three of the best growths, and secure the first crown buds. Other Japanese varieties which may be treated in the same way are Hon. W. F. D. Smith, Mary Molyneux, Sarah Bernhardt, Royal Standard, Khama, Crown of Gold, General Roberts, Edith Tabor, Australie, Beauty of Adelaide, C. F. Payne, Royal Sovereign, Sunstone, Mutual Friend, Neva Teichmann, Mons. Henri Capitant, Mrs. W. H. Lees, M. Demay-Taillandier, Niveus, and Mons. Panckoucke.

In the middle of May the following new varieties may be pinched, taking up three good growths from each plant when the buds break, and secure the first crown which produces good flowers:—Mrs. G. Barnes, Kate Fairbairn, Mrs. A. J. Baker, Dr. Hope, Fair Maid, Edwin Smith, Edith Perkins, Lili Boutroy, Elsie Brown, and Mr. A. G. Miller. Other varieties to be treated the same include R. Hooper Pearson, Dorothy Spence, George Davis, Hawarden Castle, Jane Molyneux, Elia Curtis, Mrs. E. C. Quick, Joseph Chamberlain, Lord Cromer, Sir Herbert Kitchener, A. H. Wood, J. W. Barks, Duchess of Wellington, Geo. W. Childs, John Seward, Mrs. G. Carpenter, Modesto, Nyanza, Master H. Tucker, Pride of Madford, William Bardney, and Tatiana.

The incurved varieties which require stopping should have earlier treatment, but many varieties are allowed to break naturally, and grown on to first crown buds. Some of the varieties may have terminal buds selected. Plants in small pots which are full of roots need a shift now into 5-inch* and 6-inch pots. If they remain pot-bound they will run up tall, and be comparatively spoiled. The compost to be used at this potting should be good and substantial. Two parts of good fibrous loam broken up small, one part of leaf soil free from worms, stones, or sticks, and of a sweet character, half a part of decayed horse manure, with a good admixture of sharp sand and charcoal. Add to each barrowful of this a 6-inch potful of bonemeal and the same of soot, mixing all well together. If allowed to lie together for a few days it will be all the better, but it must be kept dry, that is, not exposed to a soaking rain. It requires, however, to be moist when used for potting, but not in a condition that moisture can be squeezed out of it. See that the pots are clean, and drain them in an efficient manner, covering the crocks with the roughest parts of the compost. On turning the plants out of the pots remove the drainage from the base, but do not disturb the ball more than is necessary. Place in the pot to the desired height, and fill in soil

carefully around, working it down with a blunt stick, making it as firm as the ball of roots introduced.

If the plants can be placed in a deep frame for a few days after potting it will be an advantage, syringing them daily, but not giving a copious watering until several days have elapsed, so long as the plants remain fresh and do not flag. By this time root action will have commenced into the new soil. Afford also more air; when growing freely give the plants a fully open position, with ample space between them. Afford shelter from strong winds. If carefully and thoroughly hardened to the open air, and receive adequate protection from the east and north-west, the May frosts will not be so likely to damage them. Plants for decoration are pinched several times in the course of the season to make them bushy. The free-growing sorts which produce flowers well on any bud are the most suitable for this style of culture. The reflexed single and Pompon varieties, also the early flowering Japanese varieties, respond readily to the treatment, but do not pinch after the end of June, by which time a serviceable number of shoots should be secured, each of which will produce one good flower, or a cluster, according to the variety.

Outdoor Chrysanthemums.

The summer-flowering varieties should be planted out in the open as soon as possible. Give them a fairly open position and good soil. If planted in rows 2 feet apart they will have ample room for extension. In dry weather water until well established, and loosen the soil frequently with the hoe, mainly to keep down weeds, and the soil nicely warmed, which will promote growth. Madame Desgranges, Madame Marie Massee, Ambrose Thomas, Barbara Forbes, Crimson Marie Massee, Crimson Pride, Harvest Home, Lady Fitzwigram, Mytchett White, Nellie Brown, Blushing Bride, Fiberta, Madame E. Lefort, Martinmas, Mr. Selley, Strathmeath. The last six mentioned are early flowering Pompons; the others are Japanese varieties. In October they all make a beautiful display, and the flowers are invaluable for cutting. The plants becoming well established pass through the winter well, and prove more serviceable still another season.—E. D. S.

Societies.

Royal Horticultural—Drill Hall, May 7th.

Scientific Committee.

Present: Dr. M. T. Masters (in the chair); Messrs. Houston, Bowles, Hogg, Reade, Chapman, Douglas, Worsdell, O'Brien, Saunders, Groom, Holmes, Elwes, Michael; Rev. W. Wilks, Prof. Boulger, Prof. Church, Rev. C. Wolley-Dod, Dr. M. C. Cooke, Dr. Müller, Rev. G. Henslow, Hon. Sec.

Beetroot tumour and Schinus molle, with galls.—Dr. M. C. Cooke reported as follows upon the specimens sent to the last meeting:—“Two objects were exhibited at the last meeting, concerning which no satisfactory explanation could be given at the time, for the simple reason that, as far as I am aware, they had never made their appearance in this country before. The first of these was a Beetroot with a large fleshy excrescence, which at the time I pronounced to be a tumour of a similar character to that which affects Turnips and Cabbages. At the moment I only remembered a figure I had seen of what appeared to be the same thing, and I was under the impression that the swelling was produced by a kind of slime fungus, or Plasmodiophora. Nevertheless I spoke guardedly, and took home the specimen for examination, with the following results. The tumour is a somewhat globose nodule on the side of the root, about the size and form of a Tangierine Orange, attached to the root by a narrow neck, scarcely an inch in diameter. When the root was cut down the substance of the tumour did not seem to differ from that of the root; the pale zones on the side next the swelling passed into the tumour, traversed it concentrically, with something of the appearance which a transverse section of the root would exhibit. At the periphery darker spots appeared, just below the surface, which were nearly black, and mostly with a small central cavity. The walls of this cavity and the blackened part generally were traversed by a delicate network of mycelium, but I could find no trace of spores, or conidia, or fruit of any kind in the cavities. I may add that externally the tumour showed no discolouration or other evidence of the concealed blackened spots. The reference which was on my mind when I first saw the root was a short note in Massee's ‘Plant Diseases’ (page 225), in which he calls it ‘Beetroot tumour,’ and says that it occurred in the grounds of the School of Agriculture, near Algiers, and before that time was unknown. This must have been about seven years ago. It is thus described: ‘Large nodulose or brain-like outgrowths develop near the apex of the root, and may consist of modified leaves or rootlets; the tumours are fleshy, attached to the root by a short narrow neck, and in the substance are numerous cavities filled with dark-coloured spores. The spores are subglobose, produced at the apex of a hypha, which bears a large vesicular swelling

just below the spore.' It can only be added that the name given to the fungus causing the tumour is that of *Cedomyces leproides*. Its relations are to a certain degree with the Ustilagines, or smuts, but open to further investigation. It is impossible in the absence of fruit of any kind to affirm that the tumour under notice is the same as the Algerian specimens, although it seems probable. The production of spores may have been arrested by the climatic conditions, which are so different from what they would be in North Africa. The blackened spots and the plentiful mycelium would indicate the work of a fungus pest. An opportunity presenting itself, I submitted the affected Beet-root to Mr. Massee, and he was equally interested with myself in its examination, and together we consulted the authorities who had written on the subject, coming to the conclusion that it was very probable that our tumour was the same as the Algerian one, but only in its initial stage, assuming that it required a higher temperature for its full development. His microscopical examination confirmed my own, that there was a profuse mycelium present, and that doubtless the tumour was the result of fungal parasitism.

"The other object alluded to, as exhibited, was the young twigs and green leaves of *Schinus molle*. The leaves proved to be perfectly sound and healthy, but attached to the twigs we found five or six small discoid fleshy bodies, about 2 millimetres in diameter, attached, like a button, by a small central shank. These excrescences were whitish at the circumference, roseate, and rather corrugated towards the centre. In substance they were soft and fleshy, easily cut with a penknife, and apparently solid. Under the microscope the cell structure was found to be that of the host plant, and there were no traces of mycelium. All the evidence seemed to indicate that these bodies were a kind of gall produced by the plant in consequence of some such irritation as that caused by the puncture of an insect. Unfortunately we could find no trace of egg, larva, or insect, but it is in that direction we believe further investigation should be directed, and the plant should be watched for further developments. In both instances, therefore, we were only partially successful; and shall at any time be glad to examine either in a more advanced stage, when, doubtless, we shall have to relegate the latter to the entomologist." A unanimous vote of thanks was accorded to Dr. Cooke for his interesting and valuable report.

Daffodils, monstrous.—Rev. W. Wilks showed a specimen of what ought to have been a large trumpet Daffodil, but the peduncle bore two flowers, of nearly the ordinary size of the wild Daffodil, instead of a single and large blossom. There was no fasciation. It was interesting as a reversion to the form and size of the Daffodil, in consequence of there being two flowers in place of one. Mr. W. Logan, of Hither Green, Lewisham, sent specimens which had the corona split up into segments, and more or less crested. One half of the trumpet was elongated, the other half abbreviated, possibly indicating a double parentage of *N. poeticus* with the Daffodil. In another case the leaf was sheathed, as occurs in Grasses; the flower had five perianth leaves, five stamens, and two carpels, due to a partial arrest of growth on one side of the flower.

Ferns, crested.—Mr. Drury corrected an error in the last report, in that the Ferns he described were often crested to the third or fourth degree, but not fasciated. Mr. Henslow observed that Mr. Drury was perfectly correct. The term "fasciation" was only applied by Linnæus to stems, but as it is correlated with a continual branching of the fibro-vascular cords, Mr. Henslow classed it with several other phenomena of foliar organs, which are associated with a similar repeated chorisis of the cords, as, e.g., in crested sepals of the Rose, of the petals of Cyclamen, &c.; and Mr. Drury added the crested apices of Ferns, in none of which is there any necessary fasciation whatever. Dr. Masters criticised Mr. Henslow's statement, which laid stress on the development of the fibro-vascular cords, as the cellular tissue precedes their formation. But this was a necessary feature, as the fibro-vascular cords could not exist unless they were clothed with parenchyma. As, however, their several branches ultimately entered the foliar organs of a multifold flower, he did not think the criticism had weight. In fact, the development of cellular tissue and cords goes on simultaneously, the former continually providing the material through which the cords may ramify, and often outstripping them, as in the margins of crested petals, into which the cords do not travel far enough to reach the actual margin itself.

Violets, self-fertilising.—Mr. W. J. James, Woodside, Farnham Royal, Slough, sent some white Violets (*Viola odorata*) which produced capsules. As a rule the purple Violet sets no seed in this country, though it does in S. Europe. On examination it was found that the flowers became self-fertilising, because the beak-like extremity of the style with its stigmatic orifice was not only strongly curved upwards (because the flower is inverted), instead of being at right angles with the style, but was completely included within the connivent connectives. The connectives were all wrapped round the style, preventing the escape of the pollen, which is then caught by the spoon-like, two lowermost connectives. The pollen falls directly on to the stigmatic orifice. The flower is thus perfectly adapted to secure self-fertilisation. The plants are also provided with the usual cleistogamous buds. In these there are five minute petals, five anthers all alike without tails, forming a star-like group upon the summit of the ovary. The stigma is short, truncated, and concealed beneath the anthers, the pollen of which enters the stigma without the anthers

dehiscing by the tubes penetrating them along the lines of dehiscence in normal anthers. Mr. Henslow showed plants of the N. American species, *V. cucullata*, &c., with cleistogamous buds, apparently indicating the fact that these had become a specific character before a world-wide diffusion of the genus had taken place.

"*Kent*" *Water unsuitable for plants*.—Mr. E. Roberts, F.R.H.S., of Park Lodge, Eltham, writes as follows:—"Our water from the Kent Waterworks is not at all a fit food for our plants. I am in the habit of treating it thus. I first add 1 lb. caustic lime to 1000 gallons to neutralise the calcium carbonate, and then add 6 oz. amm. sulph., 6 oz. potassic nitrate, and 4 oz. amm. phosph. I shall be glad to know if this treatment can be improved upon, and if it is suitable for Orchids generally, including epiphytal." Prof. A. H. Church, who undertook to examine the water, reports as follows:—"In reference to Mr. Roberts' letter, I should like to make a few remarks. I have looked up the older analyses of this water, because the official results do not now include determinations of sulphates and of calcium in its several salts. After adding the caustic lime (preferably after slaking, and in the form of cream), the whole bulk of treated water is (I presume) allowed to rest, that it may deposit the separated carbonate of lime. Then to the clear liquid the salts named should be added. I think the quantities named reasonable. Anyhow, the prepared water is a mild stimulant and general plant food. Owing to the partial removal of the lime salts, it ought not to spot the foliage with a white deposit. I should not like to say anything as to its peculiar suitability to Orchids, terrestrial or epiphytic, but I think its use cannot be injurious."

Odontoglossum crispum, peloric.—Mr. T. Rochford sent a specimen in which the lateral petals were more or less crested and spotted like the lip.

Gloxinias.—Specimens with internal catacorolla and external linear crests were exhibited by Mr. Houston.

Hymenocallis sulphurea.—Mr. Worsdell showed this plant, being Dean Herbert's hybrid.

Seedling Lilies growing underground.—Mr. Worsdell referred to this subject, and added remarks upon the germination of certain monocotyledons without a cotyledon. Mr. Elwes said that he had observed how seeds of Mezereon and Lily seeds remained a long while—even three years—and then germinated. *Cephalanthera rubra*, he observed, was said to have germinated after some seventy years. Rev. C. Wolley-Dod remarked, with reference to this subject:—"In my garden the seed of Lilies often germinated, and the bulbs grew for three or four years without any visible growth above ground. This statement has been very fairly questioned, and it was said that it could not be admitted as a fact of vegetable physiology without minute and particular details. I confess that I have never made careful and continuous observations in the matter, chiefly because I assumed that it was generally known and admitted. The particular Lily about which my impressions are very strong is *L. monadelphum*. This species thrives particularly well in the heavy, retentive soil of my garden. I have been in the habit at any time during the last twenty-five years of taking a handful of the seed of this when ripe and throwing it on the surface and raking it in where there were two or three square yards of untenanted soil. At first I used to suppose that the seed perished, as no growth appeared above ground; but on digging at the end of a year or two, bulbs were found from the size of a pea to that of a Hazel Nut, but it was not till the third or fourth year that above-ground growth, nearly ready to flower, or perhaps with one flower bud, appeared. The bulbs had not only increased in size, but had dived several inches beneath the surface. As it appears that this habit is doubted by competent botanists, it would be well to have it settled by some observer more likely to see the experiment through than I am, and I shall have much pleasure, next August, in distributing packets of seed to any amateurs who will make the trial, and at the end of four years announce the result of their observations." Some years ago the question came before the Scientific Committee as to the possibility of fully developed bulbs increasing in size below the soil without having any external stem or foliage. It was maintained by some growers that such was really the case.

Hybrid Carnations.—Mr. Douglas exhibited flowers of Lady Buxton Carnation × Sweet William (♂); also the latter × Uriah Pike (crimson) Carnation; also Duchess of Fife (rose) × Sweet Williams. They were very intermediate in character, with no scent, but having more of the Sweet William foliage, and with flowers showing a tendency to cluster.

Cattleya Lawrenceana, malformed.—Mr. O'Brien showed a flower devoid of a labellum, also *C. Mendeli*, which often comes deformed, and more or less constantly so, in certain areas. Mr. Douglas observed that he had a plant with fifteen flowers dimerous or lipless, &c.

Crinum sp.—Mr. Elwes exhibited plants of *Crinum* which flowered after fifteen years. They came from near Lake Nyassa, and it was doubtful as to their specific differences from *C. capense*, as there was great variability from the seeds. *C. crassifolium* (according to Dutch growers) appeared to be the same as *C. petiolatum* from the Niger, remarkable for its globular bulb, and by continuously flowering.

Plants from Cambridge Botanic Gardens.—Mr. Lynch exhibited the following interesting plants:—*Dimorphotheca fruticosa*, only lately introduced to Cambridge from S. Africa; *Lathræa clandestina*, with

large purple flowers, which Mr. Lynch has succeeded in establishing on the roots of Willows, as well as our native *L. squamaria* on Poplars; *Hippeastrum anilicum*, one of the species of the original hybrids of the modern so-called "Amaryllis," remarkable for the great obliquity of the perianth leaves; *Cheiranthus mutabilis*, the true plant, and not the same as that usually grown under this name, it is not quite hardy. Prof. Church remarked that specimens grown at Kew show a larger range of colours than those of the Cambridge plants, and that the peculiar nature of the colouring matters is due to changes in the neutrality, alkalinity, or acidity of the sap. *Acer carpinifolia*.—This is one of the several Japanese species, having leaves without lobes, the blade closely resembling that of the Hornbeam. *Helwingia japonica*.—The foliage is remarkable for having the peduncles adherent to the petiole (as is that of the Lime to the bract), so that they are apparently borne by the leaf, and resemble superficially *Ruscus aculeatus*. *Citrus trifoliata*, a very spinescent species, requires only a very slight protection. Dr. Masters observed that it was used in Florida as the stock for Oranges, so that they could withstand frost. *Hymenanthera crassifolia*, a shrub both in flower and fruit, of the family Violaceæ. It is a native of New Zealand. *Hibbertia scandens*, perhaps the largest flowering species, somewhat resembling *Hypericum calycinum*, while *H. Readii* bore the smallest flowers; probably natives of Australia. *Stigmaphyllon ciliatum*, a handsome, yellow flowered Malpighiad. *Macleania insignis*, of the order Vacciniaceæ, a very uncommon plant, figured from the Cambridge plant in "Bot. Mag.," t. 7694 (1900). An unanimous vote of thanks was accorded to Mr. Lynch for the above exhibition.

Royal Horticultural Society of Southampton.

A splendid Queen Victoria challenge trophy, value £40, will be competed for at the autumn show of this Society. A very handsome design has been selected, in the form of a massive silver cup, with the ebonised pedestal, standing nearly 2 feet high. On the cover will be a full length portrait figure of her late Majesty, and on the sides will be the borough arms, a representation of the Bar Gate, and appropriate floral devices. For particulars, application should be made to C. S. Fuidge, 6, College Terrace, London Road, Southampton.

Bath and West and Southern Counties' Society.

This great exhibition, which lasts five days, will be held at Croydon on May 22nd to 27th inclusive. A lofty pavilion has been specially constructed for horticultural exhibits. There will be a choice display of exotic plants and flowers, which will be arranged with the special view of illustrating the beautiful effects which can be obtained by skilful groupings and combination of colour. There will be an exhibition of appliances to illustrate the drying and evaporation of fruit and vegetables, with explanatory lectures, in a building erected for the purpose. This, of course, will form but one section of a varied exhibition.

Sheffield Chrysanthemum Society.

The monthly meeting of the above was held on May 8th at the Westminster Hotel. Mr. J. G. Newsham occupied the chair. A grand display of cut flowers were shown by amateurs—Roses, Azaleas, Fuchsias, Amaryllis, &c. Mr. Simmonds was awarded a cultural certificate for a fine specimen of *Spiraea astilboides*. Mr. W. Brooks, of Grange Hall, read an interesting and instructive essay on "Weeds and Their Uses." He mentioned such common kinds as Chickweed, Groundsel, Dock, Thistle, Mint, Ragwort, Wild Carrot, Thyme, Clover, &c., giving their uses as food for butterflies, their botanical uses, &c. To illustrate the essay he brought a case of numerous varieties of moths and butterflies, the larvæ of which feed on the various weeds mentioned.

Bristol Naturalists' Society.

This Society held its monthly meeting at University College, the president (Dr. A. B. Prowse) in the chair. Mr. George Brebner read a paper on "Plant Hairs, and What they Do." The lecturer first pointed out that the term "hair" or, rather, its scientific equivalent, trichome, included a good deal more than the mere hair-like outgrowths of plants. For instance, such structures as prickles—popularly thorns—of the Rose and Bramble were included under this term in its widest application. The lecturer then went on to describe the simplest form of hair—viz., a single filamentous outgrowth from a superficial or epidermal cell. The hairs found just behind the growing points of roots were good examples of this kind, and had the exceedingly important function of absorbing water, and certain contained food substances from the soil. Covering hairs of plants were next dealt with, many of which had beautiful and interesting, sometimes complex structures, their function being mainly to prevent too great loss of water by evaporation. Various other types of hairs and their uses to plants were described, such as protective, stinging, and other sharp pointed hairs, protection of flowers from unbidden guests, capturing, and digestion of insects, aids to climbing, dispersal of fruit and seed, &c. The lecture was illustrated by a number of lantern slides. Mr. Brebner also exhibited several plants of the Rose of Jericho (*Anastatica Hierochuntica*), which a member of the Society had raised from seed and which had not only flowered, but fruited.

Royal National Tulip Society.

A Tulip Conference and the eighth annual Southern Exhibition of the above Society will be held under the auspices of the Birmingham Botanical and Horticultural Society on Thursday, May 23rd, 1901, in the Botanical Gardens, Edgbaston, Birmingham. Mr. A. D. Hall, The College, Wye, Kent, is hon. secretary.

North Kildare Horticultural Society.

The annual show of the above Society has been fixed for Wednesday, 31st July. By kind invitation of the Earl of Mayo it will be held in the beautiful and picturesque grounds of Palmerstown, near Naas. Prizes are offered for plants, fruit, cut flowers, vegetables, honey, and bread. There are also classes for cottages and gardens, and we are pleased to note cottagers are showing a commendable interest in the Society. The hon. secretary, Mr. George Paterson, Leixlip, informs us that the entries for cottages and gardens are very large, being a great increase on previous years, and there are some districts' entries yet to come in.

East Anglian Horticultural Club.

"Diseases and Pests" was the subject of an essay at the recent meeting of the above, and proved to be very interesting. There was a splendid display of cut flowers in the class for the silver cup competition, Mr. R. Notley and Mr. G. James securing the leading points. In the class for Zonal Pelargoniums Mr. D. Howlett and Mr. W. Rush again repeated their success of the Norfolk and Norwich Show with well-grown plants. In the flowering plant class Mrs. E. T. Boardman exhibited a choice apricot-coloured Azalea mollis, quite a sheet of bloom, which was easily first. For vegetables Mr. C. Hines again led, his Asparagus being very good. Mr. G. James had a splendid brace of Cucumbers, easily first, also a plate of good Tomatoes of good shape and colour. Mr. Craddock staged the best Strawberries, and the only entry in French Beans. In the non-competitive classes, Mr. W. Rush staged a box of blooms of six of the newer varieties of Zonal Pelargoniums with massive pips. Mr. D. Howlett had a box of Snow Pansies, which for size and colour were superb, and richly deserved the commendation they received. Holmes' Supreme Tomato was exhibited by Mr. W. Joice and sampled out. The duties of judging was undertaken by Messrs. J. W. Church, J. B. Field, and Simpson.

Young Gardeners' Domain.

List of Books in Library, Syon Gardens.

We have several times admired the splendid garden library and reading-room at the Duke of Northumberland's seat, Syon House, Brentford. By the courtesy of Mr. George Wythes, V.M.H., a gardener well known throughout the horticultural realm, we are enabled to furnish an entire list of this library, and we devoutly hope it may be the inspiring cause whereby those in authoritative positions may exert their powers towards providing something on the same lines in those gardens at present not thus endowed. Books are to our minds what salt is to our bodies. The latter gives tone and strength to our systems; books stimulate the brain, keep it active, and prevent it from "rusting." We have heard young gardeners remark that it was inadvisable on their part to become enlightened in case they became discontented with their lot. It is not worth while to consider such an objection. Just let our indolent, easy-going friends alone, and that will suit them. It ought to be evident to everyone, that power, position, and respect come to us through education, and so long as any trade or profession has a majority of sloths, so long may we expect that trade or profession to pay the penalty.

"The gardener, however limited the sphere of his operations, is more or less an artist, or a man of taste in designing and laying out of walks, roads, shrubberies, and plantations—these in different degrees of extent and importance, from the making of a flower garden to a park." "When," as London says, "to these uses are added the knowledge of fencing, draining, irrigation, and frequently the profitable planting of timber trees, besides the growing of ordinary vegetables, and the great arts of plant forcing; of propagation; of the systematic culture of the multitudinous plants under his charge, and probably hybridising and floral decorating, it will surely be conceded that the gardener, more than almost any of his neighbours in the labour world, requires the aid of good and numerous books." But at the rate at which young gardeners are paid they can never obtain sufficient money to clothe and feed themselves, and buy books also. This demands too much from them. Either the young men must have emoluments allowed them, so that they may buy their own books (which must be regarded as part of their "tools"), or the employer might take this task on him or herself, for it should be borne in mind that no really efficient gardeners are produced without education and guidance from books. These latter are simply the printed experiences of men who have preceded them, or have had greater advantages for acquiring a knowledge of the profession, or at

least a phase of it. It is only first-class gardeners who can draw out the best that a garden has to give, and make it enjoyable to the fullest. The moral character, the industry, and the happiness of gardeners or any other class of workers cannot but be raised when they have had the advantage of education. One of the greatest scholars of the past expressed his conviction that a well equipped library is the best university in these days. Here is the list:—

- Journal of Horticulture, 1896—1900
The Garden, 1896—1900
Gardeners' Chronicle, 1896—1900
Gardeners' Magazine, 1896—1900
Gardening World, 1898—1899
Gardening, 1880—1897
Century Book of Gardening
Fruit Growers' Guide (J. Wright)
Flower Growers' Guide (J. Wright)
Book of Choice Ferns (Schneider)
Nicholson's Dictionary of Gardening
Low's Practical Agriculture
London's Encyclopædia
London's Trees and Shrubs of Great Britain
Rhind's Vegetable Kingdom
Robinson's English Flower Garden
Manual of Orchidaceous Plants (J. Veitch & Sons)
London's Encyclopædia of Gardening
Williams' Orchid Growers' Manual
Rustic Adornments (Shirley Hibberd)
Vilmorin's Vegetable Garden
Manual of Coniferae (Veitch)
Culture of Vegetables and Flowers (Sutton)
Greenhouse and Stove Plants (Baines)
Lindley's Vegetable Kingdom
The Wild Garden (Robinson)
Paxton's Botanical Dictionary
Knight's Horticultural Papers
How the Farm Pays
Orchid Seekers in Borneo (A. Rushmore and F. Boyle)
Propagation and Improvement of Cultivated Plants (Burbidge)
Elements of Botany (Lindley)
Lindley's Theory of Horticulture
Webster's Practical Forestry
Bog Myrtle and Peat (S. R. Crockett)
Domestic Horticulture (Burbidge)
Self Instruction for Young Gardeners
Choice Stove and Greenhouse Plants
Beeton's Dictionary of Every Day Gardening
The Amateur's Greenhouse
Carpenter's Vegetable Physiology
The Name Garden
The Amateurs' Flower Garden
Hardy Flowers (Robinson)
Principles of Gardening (G. W. Johnson)
Mawe's Every Man His Own Gardener
Rivers' Rose Amateurs' Guide
Henslow's Botany
Johnson's Kitchen and Flower Garden
British Ferns (Johnson)
Paxton's Botanical Dictionary
Culture of Vine Under Glass (Roberts)
Dr. Hogg's Fruit Manual
Johnson's Dictionary of English Gardening
Dr. Lindley's School Botany
Indo-Malayan Species of Quercus and Castanopsis
Neill's Gardening
Gleanings in Old Garden Literature
The Garden Calendar
Principles of Plant Culture
Fruit Culture for Amateurs (S. T. Wright)
Carnations and Picotees (W. H. Weguelin)
Cactus Culture for Amateurs (W. Watson)
Encyclopædia of Gardening (T. W. Sanders)
Quick Fruit Culture (Simpson)
Handbook of Orchard and Bush Fruit Insects (Ormerod)
The Book of Gardening
Gardening in Sussex
Gardening for Beginners (E. T. Cook)
Geometrical Drawing
Downing's Cottage Residences
Bees and Bee Keeping
Dictionary of the Farm
Manures
Rural Chemistry
Dix's Land Surveying
Jopling's Isometrical Perspective
Spark's Introduction to Chemistry
Euclid's Elements of Geometry
Liebig's Chemistry of Agriculture and Physiology
Encyclopædia Britannica
Windsor Magazine, 1895—1900
English Illus. Mag., 1896—1900
Strand Magazine, 1896—1900
Pearson's Magazine, 1897—1900
Cassell's Magazine, 1897—1900
The Bosphorus and Danube
History of India
Lives of Engineers
Hallowed Spots of Ancient London
Memoirs of Norman McLeod
Fair France
Sunday Magazine
Good Words
Little Britain
Successful Business Men
Layard's Early Adventures
The World of the Sea
Within the Arctic Circle
Princess Alice
Royal Characters from Sir Walter Scott
Hard Times and Pictures from Italy
The Uncommercial Traveller
Old Curiosity Shop (Dickens)
Dombey and Son (Dickens)
Nicholas Nickleby (Dickens)
Tale of Two Cities (Dickens)
Barnaby Rudge (Dickens)
Pickwick Papers (Dickens)
Bleak House (Dickens)
Christmas Books (Dickens)
Martin Chuzzlewit (Dickens)
Sketches by Boz (Dickens)
Great Expectations (Dickens)
David Copperfield (Dickens)
Little Dorrit (Dickens)
Our Mutual Friend (Dickens)
A Child's History of England
Edwin Drood
American Notes and Reprinted Pieces
Journals of Maj.-Gen. Gordon at Khartoum
A Voyage in the Sunbeam
Chambers' Information
New America
Popular Scientific Recreation
Burns' Poems
Cassell's Popular Educator
Our Mutual Friend
A Trip to the Tropics
Highlands of Central India
Universal Instructor
New Homes for the Old Country
English Sacred Poetry
Life and Work of the Seventh Earl of Shaftesbury
Early Years of Prince Consort
Wreck of the Hesperus
Perrycross
Tour of the World in Eighty Days
Penshurst Castle
Columbus
Industrial Great Britain
The Manxman
How I Found Livingstone in Central Africa
Men of Might
The Ebb Tide
My Lady Rotha
Wordsworth's Sermons
Marmion
Footprints of Famous Men
Night and Morning
The Statesman's Year Book
Borrow's Lavengro
Our English Minstrels
Borrow's Bible in Spain
Scott's Poetical Works
Dodd's Beauties of Shakespeare
More Leaves from the Journal of a Life in the Highlands



Hardy Fruit Garden.

Wall Trees.—*Removing Protecting Material.*—Nets or other temporary coverings suspended for drawing over choice wall trees, when the climatical conditions are unpropitious for the flowers or fruit, are now, owing to the advance of the season, unnecessary. Movable coping boards projecting over the trees should also be removed, as they prevent the free descent of rain upon the trees.

Insect Pests.—The retention of protection often induces the increase of aphides, owing to the confined conditions; these should be destroyed by dusting with tobacco powder from an indiarubber distributor. Blighted leaves usually provide a good hiding place for aphides; these must be dealt with by removing the worst affected leaves, or dispensing with the whole shoot. This evil is caused by cold easterly winds acting injuriously on the foliage. Caterpillars which roll themselves in Apricot leaves must be crushed, or the leaf unrolled and the larvæ removed. When the young growths of Cherries begin to extend, colonies of black fly take possession in many cases, and should be destroyed by dipping in a solution of quassia chips and tobacco water. Currants and Gooseberries growing against walls or fences may be treated with tobacco powder for aphides, and with soot or lime for caterpillars.

Syringing.—In settled warm weather daily syringing of the foliage may be resorted to, carrying it out towards evening, when the sun's power is declining. The water helps to dislodge insects, and cleanses the foliage from dust, the trees from dead petals, and fruits that fail to swell. If attacks of red spider are probable, sulphur may be mixed in the water, and this, deposited on the leaves, especially the under sides, is obnoxious to the insects, and prevents their establishment.

Watering.—A dry condition of the soil at the roots of fruit trees is responsible for many evils in connection with their cultivation. Aphid or green fly is usually more troublesome when the soil is very dry at the foot of walls. Dry soil alters the character of the roots to a large extent, causing the strong roots to descend into the subsoil for the purpose of obtaining more moisture, while fibrous roots scarcely exist at all. A more equable state of the soil as regards moisture tends to increase fibrous and feeding roots in the surface soil, promoting a healthy and fruitful condition; hence, where the soil is at all dry, apply a copious quantity of water to moisten 2 feet in depth, and 3 feet or more in width. An application of liquid manure after the soaking of water will enrich the soil. The fruit will swell better, and the growth of weakly trees will be improved. Young and newly planted trees require the soil to be kept moist. This may be done by a few applications at intervals during dry periods.

Mulching.—After watering, the moisture will quickly evaporate if some dry material is not placed on the surface to arrest the loss. A mulching, therefore, of short, decayed, lumpy manure is the best to apply, spreading it 2 inches thick.

Disbudding, Thinning Shoots.—The disbudding of surplus shoots is still necessary. Remove those that are thickly placed and of unsuitable character. It is not desirable to retain thick gross shoots, but it is essential that a good basal growth on bearing shoots be encouraged, also a leading growth above the fruit. Where growths are too long for disbudding they must be removed by cutting them out. A preliminary laying-in or training will give a good idea as to which shoots require removal.

Thinning Fruit.—If a good set of fruit has been secured, it will be necessary to commence thinning when the individual fruits are attaining to a fair size. First of all remove the small, ill placed, and duplicate fruits; next the smallest of those remaining which have not swelled well, after an interval of a few weeks; finally leaving the fruits at a distance apart of 10 inches, but the last thinning should take place after the stoning period. A liberal crop may be left on strong growing trees, but on weakly trees apportion the crop to the capabilities of the branches, some of which will carry more than others. A good crop helps to keep down rampant growth.

Training Young Fruit Trees.—Although, with trained trees and bushes in the open, disbudding is not practised to the same extent as with stone fruits on walls, yet considerable benefit accrues if some endeavour is made to regulate suitable growths in their proper positions by a process of selection. This will consist in retaining the shoots that promise to extend in the desired direction, and which are at the same time of a proper degree of vigour. Strong shoots frequently start from various parts of trees and bushes quite unexpectedly, and are of a sappy character. These may invariably be dispensed with, rubbing them out when small, or cutting them clean out with a sharp knife after they have advanced to a good length. The former is the best method if their ultimate character can be determined upon early enough. This early treatment prevents overcrowding in summer, therefore the selected growths have an excellent chance of receiving the full benefit of light and air, and thereby becoming well ripened.

In addition, a better shaped tree or bush is secured, and an excellent foundation laid for building up the proper number of main branches.

Feeding Gooseberries.—The flowering period being over, and a good set of fruit secured, a good mulching of manure spread over the roots, followed by a copious soaking of liquid manure or a dressing of artificial manures, watered in, will largely assist in inducing the fruit to swell quickly to a useable size.

Fruit Forcing.

Cherry House.—Cherries are ripening rapidly in the house brought forward gently from the early part of the year, and the fruit must be kept dry; but air moisture is necessary for the health of the trees, and may be secured by damping the border occasionally with the syringe, air being admitted constantly, or condensation will seriously affect the fruit. Sprinkling the border is apt to mislead as regards its condition, which at this stage must be kept moist; therefore, if necessary, a thorough supply of water must be afforded without delay. Tie-in the shoots as they lengthen, and stop those not required for training at the fifth leaf. Ventilate freely on all favourable occasions. Netting will be necessary over the ventilators.

Cucumbers.—Remove exhausted plants, and put the house into a state of thorough cleanliness. Assist young plants showing signs of weakness, by removing the staminate flowers and first fruits, stopping at every third or fourth joint, and remove all weakly and surplus growths. Plants in bearing will require copious supplies of water and liquid manure, or top-dressings of fertiliser washed in moderately. Extra vigour may be secured by employing a little nitrate of soda in the water, but not more than a quarter of an ounce to a gallon of water, besides which, it acts well against eelworm. It is better to mix the nitrate of soda with a small quantity of water, say 1 lb. to a gallon, and let stand a short time, then add a quarter pint of the solution to each 4 gallons of water employed for watering. This is only one-eighth ounce of nitrate of soda to a gallon of water, but it gives excellent results in both quantity and colour of fruit, and the quantity can be increased to a quarter, or even half an ounce, to a gallon of water, as the plants endure stronger doses as they become accustomed to the applications.

Shading will be necessary for an hour or two in the middle of the day. Houses with the roof-lights facing east and west will not require shading. Syringe the plants moderately between 3 and 4 P.M., or earlier in case of the sun decreasing in power, and keep a moist atmosphere by damping the floors. If aphides appear fumigate or vaporise on a calm evening, and repeat early the following morning, having the foliage dry, but the floors well damped. This is equally effective against thrips. Thomson's or Clay's fertiliser, 1 lb. in 20 gallons of water, strained before use, may be used occasionally to charge the atmosphere with ammonia vapour, or liquid manure from stables or cowhouses, diluted with five or six times its bulk of water, may be used for the same purpose, applying in the evening. Either may be applied to the roots about twice a week, the plants not being allowed to suffer through insufficient supplies of water and nourishment in available form.

Seeds may be sown to occupy pits and frames. A fair amount of bottom heat should be secured by using the less decomposed material from Seakale, Vine borders, or exhausted hotbeds, which, with about a fourth of fresh material, will afford all the bottom heat now required. Afford a good top and bottom heat by duly renewing the linings.

Peaches and Nectarines.—*Trees Started at the New Year.*—The very early varieties, such as Alexander, Waterloo, and Early Louise Peaches, Advance, and Cardinal Nectarines, are ripening or ripe, and must not be syringed. Second early sorts, such as Hale's Early, A Bec, and Stirling Castle Peaches, with Early Rivers, Lord Napier, and Goldoni Nectarines, will shortly commence ripening. Midseason kinds, such as Royal George, Dymond, Crimson Galande, Grosse Mignonne, and Bellegarde Peaches; Stanwick Elruge, Humboldt, and Dryden Nectarines, will have completed the stoning process, and be taking the last swelling, it not being advisable to subject them to a higher temperature until that is insured than 60° to 65° by artificial means, commencing to ventilate at 65°, and not allowing 70° to be exceeded without full ventilation. Tie in the shoots as they advance, removing superfluous growths. Allow one fruit to each square foot of trellis. After stoning maintain a good moisture in the house, and water the inside border copiously, mulching the surface with a little short spent manure. Unless it is desired to accelerate the ripening continue 60° to 65° as the night, and 65° as the artificial day temperature, in dull weather, and 75° with sun heat, closing at the latter with plenty of moisture in the house.

Late Houses.—The crops in these and unheated houses are abundant. A moderate syringing on fine mornings is a great aid in the matter of cleanliness and maintaining a genial condition of the atmosphere, but in unheated houses there must be no attempt at an afternoon syringing for the present, and no sprinkling practised likely to cause a moist atmosphere at night. Ventilate at 50°, not allowing an advance to 65° without full ventilation, and close at 50°, or before if there is a prospect of frost at night. If water be necessary apply it sufficiently early in the day to allow of the surface becoming fairly dry before closing time.

Strawberries in Pots.—When moisture is lacking at the roots of these plants and the sun is powerful the fruits are apt to have the skin dried, and they do not swell afterwards in a satisfactory manner. This and due supplies of liquid manure, with a genial condition of the atmosphere, is essential to insure good fruits, but after the fruit commences ripening a rather drier condition of the atmosphere is desirable, also lessened supplies of water at the roots. Admit air freely when the weather is favourable. Fumigate if there be the least traces of aphides, but avoid doing so whilst the plants are in flower.



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Address (Subscriber).—The address of the paper you name is 8, Dane's Inn, Strand, London, W.C.

Adiantum Capillus-Veneris in Cornwall (W.).—This Fern is a native of Britain, and is found in a wild state in many places besides Cornwall.

Pelargonium Duchess of Teck (R. M.).—Regal Pelargonium Duchess of Teck is a sport from Madame Thihaut, and it is just possible it may have sported back to its parent, but as no section of Pelargonium continues to sport so much as this class it may be quite new, but it is rarely we get much away from the beautiful ones we already have.

Sparmannia africana (A. B. N.).—The plants will do very well out of doors during the summer. They ought not to be at any time dried off. Repot at once if the pots are at present crowded with roots. Cuttings may be struck at the present time, or indeed at any period throughout the summer. Keep them in a temperature of 65° until they are well into new growth, whence they may be potted, and afterwards receive equal treatment with the older plants. Take them indoors in September.

Cutting Down Heaths (D. M.).—Only the softwooded kinds, such as E. Willmoreana and E. hyemalis, should be cut down after flowering, and these not too closely. Hardwooded Heaths must have no such pruning as you imply, but when growing freely the young growths may be occasionally pinched early in the season to induce a greater number of flowering points. The pinching must not be done without due thought and consideration as to the state of each plant and the habit of the variety. Perhaps Mr. J. Coult's notes at page 340 were of service to you.

Sidalcea candida (D. F. T.).—The plant is a native of Colorado, and though perennial, it is yet advisable to raise a fresh stock from seeds each year. These may be sown in pans, to be placed in a temperature ranging between 55° and 60°. When the seedlings are up prick them off, and plant out at the end of May or beginning of June. A good garden soil and sunny position suits it. There is no absolute necessity to protect the plant during winter, though you could do as is done with Kniphofias—that is, cover the crowns with rough leaf mould. Division of the roots is also practised at this season.

Thinning Fruit Tree Blossom (R. Tait).—The operation is very frequently an absolute necessity. A plethora of blossom does not augur a sure and heavy set of fruit, rather the opposite, as a rule. If your trees are in robust health they will probably set more fruit than it would be advisable to allow them to carry. Hence it would be well were you to thin out the weakly or overcrowded flowers at the present time. Of course, where large orchards exist, or in large undermanned gardens, it is not possible to attempt the thinning of fruit blossom. Amateurs with leisure and a small number of trees ought, however, to give every detail the attention it deserves or demands.

Sulphate of Ammonia and Nitrate of Soda (J. R. T.).—The quantity to the plants in pots must vary with the kinds of plants cultivated, and their condition. Half an ounce to the gallon of water of either of these fertilisers is sufficient for Chrysanthemums in full growth, and much less will suffice for most softwooded plants. Liquid manure should not be given until the pots are full of roots and the soil is becoming taxed to supply the necessary nutriment. Instead of using soot in conjunction with the fertilisers named, we should use them alternately. For dressing outdoor crops, such as Onions, with nitrate of soda, 1 oz. to 1½ oz. sprinkled on each square yard of soil between the plants will be sufficient. It is best applied during showery weather.

Yucca filamentosa Plants Decayed (Somerset).—The foliage appears to have been affected by the Iris disease, *Heterosporium gracile*, which is rather uncommon on Yucca, though it occasionally disfigures or kills the leaves. It produces elliptical, pale brown, with a darker margin, spots, about half an inch long, though the spots often coalesce, or run together, and involve the whole leaf, and attacked leaves soon die; indeed, the whole top part of the plant infested. But the roots or root-stem is also destroyed, probably by the Iris root scab, *Mystrosporium adnatum*, which forms black patches, but not crustaceous, as in bulbous Irises, though the mycelial hyphae extends to every part and destroys the root-stem, so that the plant decays, usually during the winter. Spraying with ammoniacal copper carbonate solution (water 4 gallons, carbonate of copper $\frac{1}{4}$ oz., and carbonate of ammonia $1\frac{1}{4}$ oz., made into solution by mixing the carbonate of copper and the carbonate of ammonia, and dissolving in about half a pint of hot water; when thoroughly dissolved, add 4 gallons of cold water) checks the disease, repeating occasionally. But the great evil is probably that at the root and may be due to a deficiency of lime in the soil. We therefore advise a dressing of air-slaked lime, 1 lb. per square yard, pointing in lightly, and shortly in advance planting, so that it may act on the organic matter, before setting the plants. It is also well to examine the roots before planting, and if they have any black spots on them soak them for two hours in a solution of formalin, 1 part to 300 parts water. The great point, however, is to secure sturdy, well-rooted plants, and employ soil not recently manured, but rich and light, for planting, not omitting the dressing of lime.

Names of Plants (J. G. Woodford).—*Epimedium pinnatum*. (J. R. L.).—1, *Lithospermum prostratum*; 2, *Scilla italica*; 3, *Scilla amœna*; 4, *Ornithogalum nutans*. (R. F. S.).—1, *Phlox divaricata*; 2, *Cydonia japonica* var. *Simonsi*. (Henri).—1, *Cattleya Mendeli*, good form; 2, *Lælia harpophylla*; 3, *Masdevallia coccinea*. (A. B.).—*Spiræa arguta*. (A. Johnson).—1, *Caltha palustris*; 2, *Cardamine pratensis*; 3, *Begonia undulata*. (L.).—*Rhododendron ciliatum*, hardy in sheltered places in southern gardens. (C. Z.).—1, *Odontoglossum Reichenheimi*; 2, *Aërides multiflorum* (small). (D.).—The Rose appears to be identical with the "Botanical Magazine" figure of *Rosa Fortuneana*. (F. P.).—*Rhododendron* (*Azalea*) *indicum* var. *Azaleas*, as a genus, are not now regarded as distinct from *Rhododendron*. Being a seedling your variety may be quite distinct; consult Waterer, or some other large grower. (H. Wright).—*Gypsophila cerastioides*.

Phenological Observations.

MAY 17TH TO 23RD.		PLANTS DEDICATED TO EACH DAY.
17 Fri.	May fly appears.	Early red Poppy.
18 Sat.	Midge appears.	Mouse-ear.
19 Sun.	Broods of starlings fledged.	Common Monkshood.
20 Mon.	Sailor beetle appears.	Horse Chestnut.
21 Tu.	House martin builds.	Ragged Robin or Cuckoo-flower.
22 Wed.	Raspberry flowers.	Yellow Star of Bethlehem.
23 Thr.	Greasy Fritillary butterfly appears.	Lilac.

Next Week's Events.

Friday, May 17th.—Students' prize distribution by the Countess of Aberdeen, at Regents Park Botanical Gardens.

Saturday, May 18th.—Sports and concert at Swanley Horticultural College.

Tuesday, May 21st.—Kew Guild dinner at Holborn Restaurant.

Wednesday, May 22nd.—Royal Horticultural Society's great Temple Show (three days); Gardeners' Royal Benevolent Institution, annual dinner at Hotel Metropole; Bath and West and Southern Counties Horticultural Society, and Somerset County Agricultural Society's Show at Croydon (five days); Ancient Society of York Florists' early summer show.

Trade Catalogues Received.

Dicksons, Ltd., The "Royal" Nurseries, Chester.—*Bedding and Border Plants, Dahlias, &c.*

De Graaff Brothers, Ltd., Nurserymen, Leiden, Holland.—*Bulbs and Plants.*

Gardeners' Provident and Charitable Institutions.

THE GARDENERS' ROYAL BENEVOLENT INSTITUTION.—*Secretary*, Mr. G. J. Ingram, 175, Victoria Street, S.W.

UNITED HORTICULTURAL BENEFIT AND PROVIDENT SOCIETY.—*Secretary*, Mr. W. Collins, 9, Martindale Road, Balham, London, S.W.

ROYAL GARDENERS' ORPHAN FUND.—*Secretary*, Mr. Brian Wynne, 8, Danes Inn, Strand, London, W.C.

Covent Garden Market.—May 15th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.				s. d.	s. d.
Apples, cooking, bush. ...	5	0 to 7	0	Melons, each	1	6 to 2	6
„ Tasmanian, case	12	0	15	0	Oranges, case	15	0 25
Figs, green, doz. ...	10	0	12	0	Pears, $\frac{1}{4}$ case	9	0 10
Grapes, Hamburg, lb. ...	3	0	0	0	Pines, St. Michael's, each	2	6 4
„ Muscat	4	6	5	0	Strawberries, lb.	2	0 3
Lemons, Messinas, case	9	0	12	0			

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	0 to 3	0	Leeks, bunch	0 1 $\frac{1}{2}$ to 0 2
„ Jerusalem, sieve	1	6	0 0	Lettuce, doz.	0 6 1 0
Asparagus (Sprue Grass)	0	0	10	Mushrooms, forced, lb. ...	0 8 0 9
„ English, 100 ...	1	6	2 0	Mustard and Cress, pnnt.	0 2 0 0
„ Giant, bundle ...	15	0	20 0	Onions, Dutch, bag ...	5 0 0 0
„ Spanish, bundle.	1	0	1 3	„ English, cwt. ...	5 0 0 0
Batavia, doz	2	0	0 0	Parsley, doz. bnchs. ...	2 0 3 0
Beans, French, lb.	0	9	10	Potatoes, cwt.	3 0 7 0
Beet, red, doz.	0	6	0 0	„ New Jersey, lb	0 3 0 4
Broccoli, bush	0	0	1 0	Radishes, doz	0 6 0 9
Cabbages, tally	3	0	5 0	Rhubarb, doz.	1 0 1 3
Carrots, doz. bnch. ...	2	0	3 0	Savoy, tally	4 0 5 0
Cauliflowers, doz.	1	0	2 0	Scotch Kale, bushel ...	0 6 1 0
Chicory, Belgian, lb ...	0	4	0 0	Seakale, best, doz. ...	6 0 8 0
Corn Salad, strike ...	1	0	1 3	Shallots, lb.	0 4 0 0
Cucumbers, doz.	2	6	4 0	Spinach, bush.	4 0 5 0
Endive, doz	1	3	2 0	Tomatoes, English, lb. ...	0 9 1 0
Greens, bush.	1	0	1 6	Turnips, doz.	2 0 3 0
Herbs, bunch	0	2	0 0	Turnip tops	0 9 1 0
Horseradish, bnch. ...	1	2	1 6	Watercress, doz	0 6 0 8

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.				
Acacias, var., doz. ...	12	0 to 13	0	Ficus elastica, doz. ...	9 0 to 12	0			
Acers, doz. ...	12	0	24	0	Foliage plants, var., each	1	0	5	0
Aralias, doz. ...	5	0	12	0	Fuchsias ...	8	0	9	0
Araucaria, doz. ...	21	0	30	0	Geraniums, scarlet, doz.	5	0	6	0
Aspidistra, doz. ...	18	0	36	0	„ pink, doz. ...	6	6	8	0
Azaleas, various, each ...	2	6	5	0	„ King of Denmark, doz.	5	0	6	0
Bononias, doz. ...	20	0	24	0	Hydrangeas, white, pink	9	0	12	0
Crotons, doz. ...	18	0 to 30	0	0	Lycopodiums, doz. ...	3	0	4	0
Dracæna, var., doz. ...	12	0	30	0	Marguerite Daisy, doz. ...	8	0	12	0
Dracæna, viridis, doz. ...	9	0	18	0	Mignonette, doz. ...	6	0	9	0
Erica, various, doz. ...	8	0	18	0	Myrtles, doz. ...	6	0	9	0
Euonymus, var., doz. ...	6	0	18	0	Palms, in var., doz. ...	15	0	30	0
Evergreens, var., doz. ...	4	0	18	0	„ specimens ...	21	0	63	0
Ferns, var., doz. ...	4	0	18	0	Pelargoniums ...	10	0	12	0
Ferns, small, 100 ...	10	0	16	0	„ Ivy leaf ...	6	0	12	0

Average Wholesale Prices.—Cut Flowers

	s. d.	s. d.		s. d.	s. d.
Arums, doz.	2	6 to 3 0	Maidenhair Fern, dozen		
Asparagus, Fern, bunch	1	6 2 6	bnchs.	4	0 to 6 0
Camellias, white, doz. ...	2	6 0 0	Marguerites, white, doz.		
Carnations, 12 blooms ...	1	6 2 0	bunches	3	0 4 0
Cattleyas, doz.... ..	6	0 9 0	„ yellow, doz. bnchs.	2	0 3 0
Cornflower, doz. bnchs....	1	0 1 6	Narcissus Pheasant Eye		
Eucharis, doz.	2	0 0 0	doz.	1	0 1
Freesia, doz. bnchs.	0	0 0 0	Odontoglossums	2	0 3 0
Gardenias, doz.	1	6 2 0	Roses, Niphetos, white,		
Geranium, scarlet, doz.			doz.	1	0 2 0
bunches	4	0 0 0	„ yellow, doz. (Perles)...	2	0 0 0
Gladioli, doz. bnchs.	9	0 12 0	„ red, doz.	2	0 0 0
Iris, Spanish, doz. bnchs.	8	0 10 0	„ Catherine Mermet, doz.	2	0 4 0
Lilium lancifolium album	2	0 3 0	Smilax, bunch	3	0 4 0
„ „ rubrum	3	0 5 0	Spiræa, doz. bnchs.... ..	4	0 6 0
„ longiflorum	2	0 3 0	Stock, white, doz. bnchs.	2	0 2 6
Lilac, white, bunch,	3	0 0 0	Sweet Peas, white, doz.		
Lily of the Valley, 12 bnchs.	8	0 12 0	bunches	4	0 6 0
Mignonette, English, doz.	4	0 6 0	„ coloured, doz. bnchs.	4	0 6 0



More About the Cow.

THE children in all the standards in the National School here were told this week to write an essay on "The Cow," and very funny productions some of them were; and yet it is our opinion that if a hundred experts were told to write on the same subject their knowledge would be equally diverse and equally curious. There seems to be no animal which presents such an excellent subject for discussion and also for the airing of fads. A cow used to be that pretty animal that gave the nice warm milk, now she is much more than a mere milk-producing creature. Science dissects her—turns her inside out, questions her value, disputes her abilities, and goes a long way often in trying to prove her a regular fraud. Well, well, so it is; and we

expect the next generation will eliminate the cow altogether and manufacture milk by some patent process.

There were days when there was a great outcry about dishonest milkmen, and we sadly fear the outcry was justified. All sorts of expedients were resorted to when the milk ran rather short in measure and had a bluish tint. The cow of that day was no party to the fraud; the milk was manipulated after she had lost control of it. Now we suppose there are no more dishonest milk sellers; indeed there is but a poor chance that they go undetected, and the public have much cause for thankfulness. But really sometimes in our solicitude for the public do not we go a bit too far? Take the case of cow houses. We all admit they were terribly unsanitary and needed a Hercules to clean or clear them away; but have not some of the new regulations respecting the cubic feet and dimensions of cow houses almost bordered on the ridiculous? Now we do not want to be mistaken—we yield to none in our desire to see cows properly and healthily housed—but we do not want miniature palaces, and H.M. inspectors for ever at our heels. Of cleanliness we can never have too much, and that doctrine will have to be preached as long as the world and cows last. The great outcry at present is the standard question. Are, or are not, the authorities to fix a standard for all milk that is sold, a standard inflexible as the laws of Medes or Persians? It is said, and with truth, that the standard will not be the terror of the honest, only the dishonest will quail before its requirements. So it would be if the standard is reasonable; but it appears rather to us as though the best cow's milk were to be taken and all judged by it. Now all cows are by no means best, and there will be a difficulty with converting some of them even into second best. We anticipate the next remark. Why, then, keep the inferior? Why, then, indeed! You go into the markets and try to buy milk cows; it is not a very good thing to do. A really good animal is not often in the open market; and, after all, cows have another mission in life beside being milk machines. We urge, as we have often urged before, that salutary reform is needed among the dairy stock of this country; but, like all great reforms, it will come slowly. A cow is not bred in three weeks, like some of the lesser creation; and when you have bred to the best of your ability, often disappointment awaits you. Clever dairy farmers are men of great patience; they think it no trouble to constantly test each cow's milk to find whether she is paying her way, either as a milker or a butter cow, and they soon get rid of an unprofitable member.

We have been very much struck by a series of investigations, *re* the cow, that have been made at the Yorkshire county farm at Garforth. The first thing that strikes us is the thoroughness of the tests and the great patience that prompted them, and then the results following. Before we speak of these trials we would say that the present recommendation respecting the milk standard is this: That all new milk must contain 3.25 fat and 12 per cent. solids. We may remark this is a very high standard. No allowance is made here for weather, which is really one of the most important factors in milk-making. We do not say winter weather, for the cows, perhaps, hardly feel the severity of the weather then so much as they do a sharp touch of cold in what are termed the summer months—those nights when we turn thankfully to a fire, albeit the almanac says the dog days are upon us. We do not for a moment doubt that by rich good feeding the standard of fat may be considerably raised, but will the price of milk per gallon be proportionately raised too? We doubt it. The consumer thinks he pays enough as it is, and the rich food is costly.

Now for Garforth. The cows numbered eighteen. The test lasted three weeks (March-April, 1900); during that time the milk was analysed 800 times. The rations were very rich—11 lbs. per diem of cotton seed, maize, wheatmeal and bran, with chaff and hay *ad lib.* Always at the morning milking the percentage of fat was lowest, falling sometimes below 2 per cent. Always at the evening milking the highest, once reaching 7 per cent. The cows going dry produced very rich milk, and very regular in composition. The morning average of the milk was 3.2 per cent. fat; of the evening, 4.5; while the solids (not fat) averaged 9.2 in the morning and 8.9 in the afternoon. Mr. Ingle, who conducted these researches, finds that the fat in cows' milk is liable to greater variation in quantity than is generally supposed. The largest pailsful were from the morning milkings, but it was a case of quantity in lieu of quality. We presume these were ordinary Shorthorns of, shall we say, average ability. Of course, we quite see that Jerseys and other rich milkers would dish an even higher percentage of fat, but these herds are in the minority and are not the dairy farmer's ordinary stock.

Speaking of rich feeding, it is possible to overdo it, especially where butter is the object. Too much artificial food will be likely to contribute a taint to the butter, which is of all things most undesirable. It is necessary on some pastures, and especially so in hot dry seasons, to supplement the natural food by cakes or meal, and we are ourselves strongly in favour of cotton cake. Linseed cake is apt to show itself in soft oily butter, which is most difficult to manipulate, and unsatisfactory as a food product. A ration of 2 lbs. of decorticated cotton

cake and 2 lbs. of maize meal per day, given at milking time, at the cost of 2½d., will prove a good food for cheese or butter cows. In ordinary seasons a mixture of decorticated cake with crushed oats and bran make a good mixture, but if the pasture be very bare and the summer very hot linseed cake might be substituted for decorticated. One has to be guided by circumstances, and the circumstances are the weather and the richness of the grass. No two seasons are ever quite alike, and there can be no hard and fast rule.

Work on the Home Farm.

The spring Corn, which was sown so late and with so much difficulty, may after all beat the Wheat, which had promised so well. Complaints as to rustiness and loss of colour amongst Wheats are frequently heard; whilst the genial sunshine, broken occasionally by heavy thunder showers, has forced the growth of Barley so quickly that most fields present an appearance as forward as usual. In some respects the season reminds us somewhat of that of 1893. Wheats have been too thick all the season, and where they have not been well harrowed it is not surprising that they lose colour. A dressing of 100 lbs. nitrate of soda per acre, put on as soon as it can be procured, is the best antidote to this exhibition of weakness. If the crop is not growing and improving, it is deteriorating. There can be no standing still during summer. It is against Nature at this time of the year.

The rain is a perfect godsend to strong lands. Spring Corn had been sown, but it was useless to sow small seeds on such a rough clotty surface. Now they may be sown after the Cambridge roll; the flat roll should follow, and a set of harrows if the state of the grain crops warrant it.

Sheep pastures are getting quite large, and we heard a farmer the other day grumbling because he had too much keep for his sheep; his seeds are too good! At the same time he is short of grass for his cattle. At present sheep are much cheaper relatively than cattle, so it would be very unlike the usual farmer's character to keep sheep and sell cattle; even though his pastures would be favourable to his doing so, he will surely do the contrary. Is not wool down to 6d. per pound? No doubt farmers would like, if they could, to give up sheep altogether, and deprive the consumer of English mutton because he will not wear English wool. Such action would have a great similarity to the present action of the coal miners.

Cattle are doing well, and the cows and heifers, with pairs of calves sucking, are now taking the calves out near home preparatory to grazing in a further pasture. Care has to be taken to see that each calf gets its proper share. Cows that have not been long dry and are intended for feeding should be kept carefully away from a field where there are sucking calves. It is very annoying to find such a cow come back to give a little milk through her allowing a strange calf to suck, besides the danger of downfall if this is not discovered.

Chinese Agriculture.—At Tientsin, the scene of the recent fighting, the soil of North China is alluvial or loamy, and is usually capable of producing good crops when there is an adequate rainfall. The most important cereal is Wheat, which is grown everywhere, with but slight difference in the mode of cultivation. Spring Wheat is grown in only a few districts; as a rule the ground is ploughed for Wheat in the autumn after the other crops have been housed, and as soon as there is a good fall of rain. The Wheat, like almost all the other crops, is put in with a drill, mixed with pulverised manure. Much of the land yields two full crops a year, and after the Wheat is gathered in June the ground may be planted with Beans, Sweet Potatoes, Maize, or some other late crop; but it is regarded as better to let the ground lie fallow until after the autumn harvest, when Wheat may be put in again, the increased yield compensating for the loss of the extra crop. The Chinese understand the rotation of crops, and usually cultivate in accordance with it; but, as a rule, they are indifferent to the quality of the seed planted, and they often think it economy to sell the good seed and keep imperfect and withered grains for planting. Indian Corn is one of the standard crops, though the yield per acre is small; Barley, Oats, Buckwheat, Sesame (used to flavour Wheat in cakes), and Tobacco are also grown. Sweet Potatoes are found everywhere, and form the cheapest food of the people. Beans are grown in great quantities, chiefly the coarse black Beans, used for feeding animals and making a crude oil which is much in demand. The Bean cake left after the oil is extracted is an important article of commerce, being used as manure for the Sugar Cane and other crops. Pea-nuts and their oil are also largely produced, as is Opium. Cotton is of great importance in certain districts. Compared with Carolina Cotton, the Chinese plant is a very poor one, the boll being not much larger than a Walnut; but the clothing of hundreds of millions of Chinese comes from it, but the cheaper though less durable yarns from India and Japan, as well as more recently from China itself, are ousting those made by hand by the peasantry of North China. Market gardening of all kinds exists, and the Chinese excel at it. Chinese agriculture, like everything Chinese, illustrates the talent of the race for doing almost everything by means of almost nothing. They fatally lack initiative, but if new methods are forced upon their attention they may be persuaded to adopt them, and, once having done so, they will not again give them up.



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Journal of Horticulture

THURSDAY, MAY 23, 1901.

High Class Gardening.

IN all degrees of gardening, and in gardens of all degrees, ideals abound. In many cases, perhaps, ideals only of the most shadowy kind, never clothed in the form and substance of tangible reality, but doomed to remain as the ghosts of departed glory or unattained ambition. Such may be of little use, but are not wholly useless, for those sustained by the ever present hope of better things to come never sink into hopelessness. "Man never is, but always to be, blest." Anomalous as it may appear, observation tends to the inference that perfection is oftener approached in small gardens, although they may not fairly represent comprehensive horticulture, than it is in more pretentious ones, although in the latter we seek our ideals, for in spite of the general progress of gardening unavoidable causes have brought down many a gardening home from its high estate of excellence to the low level of mediocrity.

So the old order of things not only changes, but often begets more or less deterioration, with all its correlative, pernicious, and demoralising effects. How are the mighty fallen! It is to the credit of many a chief-in-charge that, with a diminished exchequer, and the serious handicapping of his efforts consequent upon it, a perennial, if hopeless, struggle is maintained to have things as they were, but the wisdom of endeavouring to follow on former lines is more than doubtful when a proper estimate of ways and means would show that it is impossible. Those who attempt too much often accomplish too little. Much as we may admire the dogged perseverance of men who are lured on by the false light of an optimistic illusion, the fault cannot be praised, and the profuse apologies frequently made in the endeavour to veneer the roughness of things generally may be so painfully apparent as to create the feeling that *Qui s'excuse, s'accuse*. Quality, and quantity, in a sense, are cardinal points in high class gardening, but quality must ever take the pre-eminence.

READERS are requested to send Notices of Gardening Appointments or Notes of Horticultural Interest, Intimations of Meetings, Queries, and all Articles for Publication, officially to "THE EDITOR," at 12, Mitre Court Chambers, Fleet Street, London, E.C., and to no other person and to no other address.



Fraternal criticism, like brotherly love, is, as a rule, generously disposed towards the man severely handicapped—handicapped by circumstances beyond his control; and here the whole matter might be summarily dismissed if one could ignore the fact that the unfortunate ones too often handicap themselves. As a case in point to illustrate what our text aims at, from a collective view of many gardens, to obviate invidious comparison, more or less blighted by poverty, one shows the retrograde movement more pronounced in the glass department than elsewhere. Formerly noted for its extensive collection and high-class culture of stove plants, there is no diminution of the numbers grown; in fact the reverse obtains, for the houses are packed with a miscellaneous assortment, for which the lads in charge have, as their chief will tell you, "only half enough time for properly attending to them, though they work like blacks." The dual assertion is heartily endorsed, for "the lads," although left pretty much to themselves, are invariably found fighting the work shorn of all those cumbrous contrivances in the shape of coats, collars, and ties, which adorn the young fellows whose lot is cast in more pleasant places. In this case (common enough) two-thirds of the plants grown would find a fitting place on the rubbish heap, to which they might be immediately relegated, thus reducing the work by half, to the distinct advantage of all concerned. As it is, mealy bug runs rampant through the impoverished and overcrowded plants.

Aprôpos of mealy bug and other expensive pests, which are serious factors in the economic working of a garden, a struggling but energetic nurseryman once said, when complimented on the freedom of his grounds from weeds, "My dear sir, weeds are too costly for me to grow; I'm a poor man and can't afford to have them." So with stove plants and all the disgusting parasites they are heir to. What patience tolerates, perseverance can overcome. Impossible, may be said, and has been said, but it is an *impossible* which has no place in high-class gardening. There is no satisfaction in fighting unless the end is within measurable distance. Fight by all means, but by all means fight to a finish. It is not an uncommon occurrence to find in kitchen gardens unnecessary quantities of particular vegetables grown, much of which eventually goes to the rubbish heap. On one occasion when visiting a garden at this season of the year, a couple of men were busy clearing out the root house, and our gardening guide proudly pointed to the visible tokens of his fertile soil, superabundant crops, and cultural skill. "It's the same every season," he said. What a leakage of force, one thought, laid in every barrowload that was being trundled out. In fact as much was hinted at. No! Vegetable growing was this gardener's *forte*, he liked to see good crops even if they were not wanted, and this in spite of growls both loud and deep anent his reduced staff, which was only too evident in other directions. This particularly good vegetable grower resented the hint thrown out. Well,

'Tis best sometimes your censure to restrain,
And charitably let the dull be vain.

Where the surplus of a garden can be disposed of at a profit, circumstances of course alter cases, and of course, too, a prudent man will always provide for a margin; but where that margin adds 50 per cent. to his labours and yields but little more than the gratification of a whim, that also is too costly for the man who cannot afford it.

There are but few gardens worked under the high pressure of low circumstances, in which a waste of force in one or other direction is not noticeable; and in some of them the spurious reasoning deduced from the very doubtful benefits conferred by those who make two blades of grass to grow in the place of one appears to generate as well as maintain most of the evils of which an impoverished garden is heir to. To have or not to have what is actually superfluous, absorbing time and labour, and detrimental to what is essentially necessary and vitally important, is really the question. One pleasing example at least can be pointed to, in which quality has not been sacrificed to an inordinate desire for quantity. When it was found that a large collection of stove and greenhouse plants were likely to deteriorate into that heterogeneous mass of dirty impoverished plants which marks the reign of poverty, nothing was kept that was not really worth keeping, or for which there was not time for proper attention to be given. The man at the helm of the undermanned ship shortened sail, and wisely steered on true economic lines. It now seems, indeed, to be his fixed principle that what is worth doing at all is worth doing well, and what cannot be done well is better done without, hence high-class gardening has never been shunted by adverse circumstances on to the poor lines of mediocrity.

Rigid rules or hard and fast lines cannot, however, either govern or control gardeners and gardening of whatever degree. There is nothing, could be nothing, advanced here that is not open to argument,

but more than possible there may be truths for those who are open to conviction. All lies "in the application of it," as Captain Cuttle would say. Adaptability is the secret of success in all grades of gardening. Much might be done by masters in assisting struggling, but faithful and conscientious servants—gardeners. One, in fact, has done much to ease the pinching shoe by allowing his head gardener to expend the reduced amount he allows for financing the garden entirely at his own discretion. Needless to say, a minute account of all monies disbursed is always ready for the master's eye, but beyond that the yearly allowance is solely in the gardener's hands to do as he thinks best with; and there is no man but the gardener who really knows, knowing what he has, how to make the most of what is at his disposal. This man is a first-class gardener, as many struggling men are, and has full faith in his own powers to do the best possible with what is at his command, and if more employers would recognise this it would be to their distinct advantage.

To know the worst is an incentive to doing the best. It is sometimes a gardener's misfortune, but not his fault, that motives are misunderstood. Would that our masters could peep behind the scenes and see things as they are, not as they seem. The writer once heard a gentleman remark that the greed of gardeners was proverbial, yet it is not an uncommon thing for a man who has hitherto been up-to-date endeavouring to keep so by surreptitious purchases, paid for out of his own pocket. Greed it may be, but surely it is the most unselfish form of it possible. There are two sides to the whole question, as there are, indeed, to most questions—the master's side and the man's side, as well as various angles from which both are disposed to look at it, but a combined view, focussed by common sense, should throw a better light on the main object.—K., *Dublin*.

Book Notice.

Thompson's Gardener's Assistant.*

THE subscribers to this revised work must be more and more satisfied as each part is issued and placed before them. The third division, completing volume i., was published recently. It is mainly devoted to the details of pure, practical gardening, as distinct from the scientific sections that have formed the substance of what appears in the forerunning volumes. We feel that it is impossible to do full justice to the merits of the part now before us. Regarded first as a work of guidance to the practice of all-gardening, that is, every phase of the art, the trained, professional practitioner could not possibly demand a work of clearer or fuller exposition, nor could he wish for a brighter method of general arrangement. Greenhouse and stove plants, Orchids, Ferns, Palms, and Cycads, succulent plants, hardy herbaceous and bulbous subjects, together with trees and shrubs; and such gardening operations as spring, summer, carpet, sub-tropical, and winter bedding, each receive a full explanatory chapter. Where an apt illustration has been deemed to be of use and effective, that illustration is duly provided. In this respect the volume is almost equal to the most elaborate publications of recent times. With a few exceptions, each of the 240 pages comprising the issue bear attractive plates, though perhaps the exact value of the illustrations may not in every case be conveyed to the reader from the absence of any scale on which to base comparisons. A considerable amount of value and interest attaches to the concise informative notes that describe what species have been used as breeders to furnish the marvellous variety that characterises many genera of the most esteemed garden plants.

The article on Roses will be found especially interesting, while the splendid genus *Narcissus* has been delineated by one who is second to none in his love for, and knowledge of, this beautiful section of spring flowering bulbous plants. And so with *Hippeastrums*, *Chrysanthemums*, *Pelargoniums*, *Cinerarias*, and such others, devotees and enthusiasts will find much to gratify them; and young craftsmen, besides the cultural details, will gain knowledge on matters of relationship that probably they had no previous conception of. Such recent plant novelties as *Coleus thrysoides*, *Hidalgoa Wercklei*, *Cyclamen latifolium*, *Papilio*, *Nepenthes Tiveyi*, and a great many other subjects are illustrated and described. The work, indeed, proves itself to be entirely remodelled and brought up to date. Three coloured plates appear in part iii. At the price of 8s. a part, the work is remarkably cheap. The arrangement we have referred to as very satisfactory, and both paper and printing—which add or detract so much to, or from, the pleasure of books—is of the highest class. Mr. Watson as editor certainly deserves success, and we think is pretty certain to achieve it. No gardeners' bothy or library is complete without "The Gardener's Assistant."

* "The Gardener's Assistant," a practical and scientific exposition of the art of gardening in all its branches, by ROBERT THOMPSON; new edition, edited by William Watson. Divisional, vol. iii. London: The Gresham Publishing Company.



Root Pressure.—Prof. S. H. Vines, president of the Section of Botany in the British Association, referred in a recent address to the force by which water is raised from the roots to the topmost leaf of a lofty tree, and remarked that it must be regretfully confessed that one more century has closed without bringing a solution of the old problem of the ascent of the sap. One of the suggested explanations requires that in a tree 120 feet tall the transpiration force must equal a pressure of 360 lbs. to the square inch; but Prof. Vines says there is no evidence that a tension of anything like such an amount exists in a transpiring tree.

Caladiums.—The following are choice varieties:—Alexander III., large, bright red, with a green margin; candidum, white ground, veined with green; Exquisite, carmine, edged green; Fairy Queen, small leaves, white, bordered green; Gartendirector Gireaud, greenish yellow, ivory white ribs, speckled with reddish pink; Gaspard Crayer, red centre, green margin. The variety named Illustrious, with a yellowish white ground, splashed carmine, is a splendid sort. Golden Queen is pale golden yellow; Gurupa, blood red; Her Majesty, veins apple green, interspaces silvery white, with some carmine stains; Lord Derby is a beautiful tricolor variety; Lord Penrhyn, dark crimson, and green and white; Louis A. Van Houtte, red, shaded faintly with bronzy green; Reine de Danemark, delicate rose and network of green; Rose Laing, white ground, blush veins; and Silver Cloud, silvery white, green spots, carmine veins.

Exhibition Phyllocacti.—Only those, such as Mr. J. Heal of Messrs. J. Veitch & Sons, Ltd., who have performed the feat of staging a Temple Show group of Phyllocacti, understand how much the task demands. For weeks past—to go no further—Mr. Heal and his assistants had been manipulating the plants which eventually they showed in such creditable condition at the Temple Exhibition this week. Incessant care and consideration is required. The buds are measured almost every day, for the expert knowledge can decide if a little extra heat, or, on the other hand, cooler conditions, will be required, so that the ephemeral but exquisitely beautiful blossoms may open almost to an hour, and certainly to a day. If a few plants are too forward they have to be carried to cooler quarters and shaded, and this alternate forcing and retarding constitutes the necessary work that is ultimately crowned with the success we are all well acquainted with. The illustration on page 433 in no exaggerated degree shows the Chelsea Phyllocacti as they appeared at the Temple Show. Few plants produce more beautiful flowers, and we are pleased to say that the Chelsea firm is now evolving a strain of plants whose flowers last longer in a fresh condition.

Strawberries in Barrels.—The first appearance of this novel system of cultivating Strawberry plants on any pretentious scale was something over a year ago. A firm of sundriesmen who manufacture barrels for Strawberries exhibited these conveniences at successive meetings of the Royal Horticultural Society in the Drill Hall. Since then a good deal has been both said and written upon the subject. That Strawberries can be successfully cultivated under the novel conditions of growth (from a vertical surface) is surely proven by the splendidly fruited examples shown in the illustration on page 439. The photograph was taken at Gunnersbury House, Acton, W., where Mr. James Hudson has given the system a trial in his usual thorough manner. Any barrels are suitable so long as they are perfectly clean and free from injurious taint inside. Three-inch holes are drilled over the surface-sides of the barrels, and through these the Strawberries are drawn at planting time. The centre of the barrel (say a foot square) is left free for stuffing fermenting material into. About 1 foot or less of soil is thus left all round the sides for rootage. One of the main points to observe in culture under these conditions is to maintain an equable moistness of the whole bulk of the soil. The barrels must constantly be kept turned so as to expose the plants to the different conditions of light. As a rule the uppermost plants are the healthiest

Electrifying Seeds.—Electrified seeds germinate more rapidly than others, and by burying in the soil one zinc plate and one copper plate, placed vertically and connected by a wire, Potatoes and other roots grown in an electrified space have secured or produced about three times the crop that others do in similar soil close by, but without the electricity. It is also applied to the ripening process, and found to be successful.

Viola cornuta papilio.—Here we have a new type of Viola so persistent in its blooming that even till November one can pluck flowers from it, and in the first week of May the same plants will again be as floriferous and fresh as ever. It blooms continuously the whole season. The flowers very nearly approach to the likeness of the old and well known *V. cornuta*—that is, bright blue, though in size they are larger. A bed or an edging of the above is, indeed, very showy.

Tulipa Picotee.—A correspondent writes:—"I see in your issue of last week that 'Wandering Willie' has made an error by placing Tulips elegans alba and Picotee as synonymous in his article, *re* 'Tulips,' on page 418. The two are quite distinct, although when in a young stage, or before they have fully developed, they may be taken for the same variety. T. Picotee is a reflexed white flower, with a deep rose colour on the edges, which colour, as the flower ages, sometimes runs almost through the petals, while in T. elegans alba the carmine edge is regular and very narrow, and remains distinctly defined until the end."

Double-flowered Arabis.—A splendid plant, as hardy as any one could desire, and literally smothered with its beautiful snow-white, double, rosette flowers. It reminds one of nothing so much as a slender double Stock in full flower. The common Arabis alba with single flowers is not to be compared with its double-flowered variety. Plants of the latter grow 9 inches high, and bear long racemes, well studded with flowers. No one in search of an all-round, useful little border plant should omit this double Arabis from the garden. It can be planted now.

Landscape Gardening.—The perfection of landscape gardening consists in the four following requisites:—First, it must display the natural beauties and hide the natural defects of every situation; secondly, it should give the appearance of extent and freedom, by carefully disguising or hiding the boundary; thirdly, it must studiously conceal every interference of art, however expensive, by which the scenery is improved, making the whole appear the production of Nature only; and fourthly, all objects of mere convenience or comfort, if capable of being made ornamental, or of becoming proper parts of the general scenery, must be removed or concealed.—(REPTON). Surely we may differ from Repton's views on the point that art must be "studiously concealed." There is no absolute necessity for this, indeed it is not desirable.

Rose Lady Battersea.—This lovely new Hybrid Tea Rose is admitted to be a seedling variety of great distinctness of character. It has been shown frequently at the Drill Hall, and was seen again at the Temple Show, from Messrs. Paul & Son, The "Old" Nurseries, Chesham, Herts, by whom it was introduced to commerce. The variety should prove of value to both florists and gardeners for early forcing, this being a quality for which it is distinguished. The flowers are borne on long vigorous shoots, the foliage is of a pleasing shade of green, and the floriferous character of the plant has more than once been remarked. The flower buds are long, oval, and pointed, and of a beautiful cherry crimson permeated with an orange shade. The flowers are of moderate size and almost full, with the petals so well together as to retain their form for a long time. When first open, the blooms are light rosy crimson, still keeping the sub-orange tinge of the bud, brilliant in the extreme—then passing to pure soft rose, the colour clear and attractive to the last. The illustration on page 436 very effectively depicts the Rose, and better than a page of descriptive text. It has received an award of merit from the Royal Horticultural Society. The variety, as a pot plant, can be had in flower till November, and with a short rest the same plants will produce forced flowers in February. As a variety for massing it is recommended. The plants will be sent out at the end of this month in (4S's) 5-inch pots. They may be planted out at once in a properly prepared bed, and, if watered carefully for the first fortnight, will bloom towards the autumn, and establish themselves thoroughly for the next season.

NOTES

NOTICES

Weather in London.—Thursday, 16th inst., was bright, warm, and delightful, but Friday came dull and decidedly cool. Saturday opened mild and bright, but became clouded. Sunday was hot, Monday mild, while Tuesday and Wednesday were bright and breezy.

Weather in the North.—A succession of bright warm days, with the barometer frequently about 70° in the shade, has marked the past week. The evenings, however, from the wind settling into the east in the latter part of the day, have, as a rule, been cold. Rain would be welcomed.—B. D., *S. Perthshire*.

Kew Gardeners' Guild Dinner.—The past and present Kewites met convivially and enjoyed dinner (second annual function) in the Venetian Room of the Holborn Restaurant last Tuesday evening. About 150 sat down under the presidency of the Director of the Royal Gardens, Kew, Sir William Thisleton Dyer. After the repast was partaken of, songs and speeches occupied the evening.

Coventry Chrysanthemum Show.—The seventh annual exhibition of the Coventry and District Chrysanthemum and Floricultural Society will be held in the Market Hall, Coventry, on Tuesday and Wednesday, November 5th and 6th. Good prizes are offered, even to so much as £5 as a first for a special group of Chrysanthemums. Mr. J. Cooper, 31, Foleshill Road, is secretary.

Fruit Prospects.—The Plum and Pear trees in the southern part of Lincolnshire last year gave record crops, and with an absence of severe frosts the prospects this year are quite as encouraging. Much of the early Apricot bloom was destroyed by the sharp weather. Nevertheless, a large quantity of fruit has "set," and there is promise of a heavier crop than last year. Both Gooseberries and Currants are likely to be plentiful, but it is yet too early to speak of the Apple prospects.

Horticultural College, Swanley, Sports and Concert.—The annual gathering in connection with the sports and concert of the above college took place on Saturday last, May 18th, at Swanley. Favoured with ideal weather, a large company assembled on the cricket field at 3 P.M., when a series of events were gone through, ladies and gentlemen competing. Perhaps the most interesting race was the 220. Here the handicaps were so well arranged that a pocket-handkerchief could have covered the space occupied by the first, second, and third competitors, Powell winning by inches only, with Parker and Buck a dead heat for second place. Crichton won the challenge vase, his running and jumping being very good. Not the least interesting was the ladies' umbrella bicycle race, won in very good style by Miss Wetham. After the sports tea was served for visitors in the saloon, which once formed part of the "Bessemer, and at 8 P.M. the prizes won at the sports were handed to the various winners by Miss Emmeline Sieveking, secretary to the governing body of the college, amid the loud applause of the assembled company. This over, the concert began, and included songs, recitations, banjo trio, piano solos, and two small comediettes.

Calceolarias from Altrincham.—At the end of last week we were the recipients of a boxful of Herbaceous Calceolaria blooms. These came from Messrs. Wm. Clibran & Son of the Oldfield Nurseries, and displayed an exceedingly rich and varied strain of these deservedly popular greenhouse plants. Many of the individual blooms were well over 2 inches broad, and as deep, being perfectly formed and brilliantly coloured. One of the most pleasing represented a bright buff yellow shade, and was of extraordinary size. This must have been very effective when upon a fully developed plant and seen in mass. Various other shades of yellow were present, and many of the pouches had attractive brown, red, or rosy blotches, suffusions, or markings. The velvety crimson and blood-red-crimson varieties were exceedingly pleasing to the eye, and satisfying. But, indeed, the selection has no end. Every shade in yellow or reds, or combination of these colours, was represented, and with the diversity (we had forty-six blooms, and all were different) in this respect we would also emphasise the fact that brilliance, good form, and size are very particular qualities of the blooms we here refer to.

Royal Horticultural Society.—Her Gracious Majesty Queen Alexandra has consented to become Patron of the Royal Horticultural Society in place of the late Queen Victoria.

Sugar Factories.—In a few months there will be forty-two beet sugar factories in operation in this country, no less than thirteen being now in course of erection. This can only mean that the beet sugar enterprise is now established, and that we can, if we choose, be independent of other nations in the production of sugar, and that without the encouragement of the bounty once thought necessary.

A Handsome Orchid Catalogue.—Special Orchid catalogues are as yet scarce. The one published by L'Horticole Coloniale, of Parc Léopold, Bruxelles, Belgium, and which reached us a day or two ago, is very complete, and contains full-sized illustrations of many new and improved forms of Orchids. *Cattleya Trianae exquisita* is a beautiful variety, that appeared from amongst an imported batch in their houses at Moortebeek. Descriptions of it appear in the catalogue. Amongst other subjects are *Cypripedium insigne albinos*, *C. i. Chantini Lindeni*, *Cattleya Loddigesii Harrisoniae alba*, and *Odontoglossum crispum Papillon*. Numerous notes of interest are included in the pages of this Orchid catalogue.

Royal Gardeners' Benevolent Institution.—The sixty-second annual dinner in support of the funds of this charitable institution, whose purpose is to assist infirm gardeners or their widows by awarding pensions, was held last night (22nd inst.) in the Whitehall Rooms, Hôtel Métropole. The Right Hon. the Lord Llangattock (who has assisted the secretary, Mr. G. J. Ingram, in every possible way) occupied the chair, and there were also present the Very Rev. the Dean of Rochester, and other wholehearted supporters of this most deserving institution. The Journal goes to press on Wednesday afternoons, and we are thus unable to furnish a report of the speeches or list of the subscriptions in the present issue, but trust to do so in our next.

Notes on Carnations.—A very interesting and instructive lecture was given by Mr. H. Elliott of Hurstpierpoint on "Carnations their Culture, &c.," at the last meeting of the Brighton and Sussex Horticultural Society. Next to the Rose, he said, the Carnation was the most popular flower grown in England. It had been cultivated in this country for about 500 years, and during that long period it had undergone much improvement. The Carnation was supposed to have originated from the wild *Dianthus Caryophyllus*. In England this wild plant was generally found on old castle walls, but it grew much more abundantly in France. Personally, however, he doubted if this was the sole plant from which the Carnation came. A great many of their Carnations had been derived from Germany and Holland, English cultivators having obtained their best species from these countries. He said that the Picotee was simply a variety of the Carnation. The lecturer then went on to describe several distinct species of Carnations and their properties, mentioning the Princess of Wales and others. Speaking of their culture, Mr. Elliott said if they wanted the flowers to come up fine, healthy plants, they must put them in early, in nice temperature and in good loose mould, treating them much the same as Strawberries.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night.		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest.	Lowest.					
1901										
May.										
Sunday 12	E.N.E.	deg.	deg.	deg.	deg.	Ins.	deg.	deg.	deg.	deg.
Monday 13	E.N.E.	56.7	49.8	62.7	38.5	—	51.9	51.2	49.7	32.5
Tuesday 14	E.N.E.	51.7	47.5	64.7	44.9	—	53.0	51.5	49.9	39.2
Wednesday 15	E.N.E.	54.8	49.3	69.5	42.0	—	54.1	52.1	49.9	37.2
Thursday 16	E.N.E.	58.7	50.0	68.5	42.0	—	55.0	52.7	50.0	35.5
Friday 17	E.N.E.	49.1	43.8	69.0	44.0	—	55.3	53.2	50.2	35.2
Saturday 18	E.N.E.	46.4	43.5	54.9	41.0	—	54.5	53.2	50.5	34.0
		51.8	45.4	63.5	35.5	—	52.9	52.9	50.5	27.0
MEANS		52.7	47.0	64.7	41.1	Total	53.8	52.4	50.1	34.1

A week of fine but dull weather, with cold drying winds.

The Temple Show.

May 22nd, 23rd, and 24th

TIMES are changed since the martial Templar swaggered about his domain upon the rural banks of the Thames, and the rival partisans of the Houses of York and Lancaster quarrelled in the garden there, and chose for their respective emblems Roses white and red. But Templars we still have, and not merely men of big words, as the muster roll of the C.I.V.'s can prove, and the weekly evolutions of the "Devil's Own" before the admiring crowd of *gamins* on the Thames Embankment bear witness. Thanks, however, to the mollifying course of events, the Templar at home is now a pacific person, distinguished by a top hat, patent leathers, and walking-stick, and the partisans of the white and the red Roses, though imprecating the awards of the judges, and muttering words of dark and hidden meaning, do not proceed to the extremity of civil war. With the new revolving spring we again welcome the vernal tourney of flowers held under the auspices of the Royal Horticultural Society, and the marquees, with their clouds of ebullient canvas, once more rise in Temple Gardens, exciting the curiosity of the waterside population, and fluttering the hearts of London Society.

It is well known that no more tents than the five that have hitherto been erected to shelter the exhibits which form the Temple Flower Show are allowed by the Treasurer and Benchers, by whose courtesy it is that the Inner Temple Gardens are for three days each year placed at the disposal of the Royal Horticultural Society. This being so, the visitor who has once seen this great horticultural exhibition finds each succeeding show much the same as its predecessors. The tents and their arrangement are absolutely the same; the only difference that can be made is in the disposal of space and the ingenious arrangement of the varied collections that the tents cover. The main features, however, never alter, yet, like the old Sabbath school hymns and the Gospel of Peace, though they are "ever old," yet we feel also that somehow they lay claim to the other part of the quotation, which infers that they are "ever new." New plants or new varieties are certainly always being brought forward; herein lies the secret of the Temple Show's attractions. This is the southern Mecca to where all devout and good British (and continental) gardeners bend their steps. Plants, fruits, and vegetables, that have been almost guarded for weeks past by jealous, yet withal, thoroughly free-hearted nurserymen, gardeners, and amateur cultivators, are staged for the fullest inspection by whosever careth. And do not the doughty champions wrangle and "haggle" (in a good-natured manner, of course), when glasses have been exchanged and friends have inspected friends' collections? Yes, the old scenes are again gone over, and if the Temple Show was identically the same every year of the decades, we would find the man from the South coming to meet the man from the North, and this event would be still an outstanding feature of the horticulturist's year. But, as we have just said, though the exhibits are similar year after year, yet improvement is slowly and surely taking place, and newer and better plant subjects are always being brought forward.

Orchids were specially distinctive this year, for there was a special amateurs' competition for the Sherwood cup. The leading southern growers staged magnificent groups, which our report describes. Roses, Pæonies, Irises, Lilies, Carnations, Begonias, Ferns, insectivorous plants, Cacti, and fruits and vegetables, together with interesting groups of shrubs (clipped and unclipped) out of doors, plus numerous grand foliage and flowering arrangements under canvas, formed a splendid new century exhibition. The anxious weeks of dull and dismal weather have passed, and though plants were backward in some cases, yet unanimous opinion described this year's Temple Show as "a wonderful

exhibition." Tuesday afternoon turned out hot and breezy, so that the work of arranging groups was particularly trying for the men. The plants, too, keenly felt the excessively drying conditions.

Orchids.

Messrs. Stanley Ashton & Co., Southgate, N., staged *Masdevallia ignea*, a well-flowered piece; *Miltonia Bleuana*, *Lælio-Cattleya Massangeana*, deep purple lip, brown sepals; *L.-C. Highburyensis* var. *superba*, and *Cattleya Mossiæ Maimuna*. The latter is a soft, rosy lilac variety, with yellow lips and mauvy throat. *Ada anrantiaca* was well represented. Among *Odontoglossums* were *O. crispum*, *O. Adrianeæ Hellen*, *O. c. punctatum*, *O. triumphans*, and others. *Cochlidia Noezliana*, brilliant crimson scarlet, was seen in ripe style. *Cypripediums* were liberally included.

Messrs. Sander & Co. of St. Albans were of course forward with a choice group of Orchids. Some exceedingly fine pieces were on view, including *Cattleya Reineckiana* var. *Mis Kate Brazier*, which, however, was not fully expanded. The beautiful *Cattleya Mendeli Queen Empress*, figured in last week's Journal, was exhibited in specially good form, the beautiful purple lip being well coloured. *Odontoglossum facetum nobilior*, with a twelve-flowered raceme, was a specially good feature. The flowers were brown, edged sinuously with yellow, and

each were large. *Cattleya intermedia alba* was represented. The flowers are waxy and pure white. *Odontoglossum Pescatorei Empress*, pure white with purple spots on the petals, was conspicuously fine; *O. crispum album*, a strongly flowered plant with white and creamy flowers; *Cattleya Reineckiana* was represented by good plants in pans, bearing numerous large flowers; *Odontoglossum concolor* was specially good; and the recently seen *O. Adrianeæ Canary Bird*. *Dendrobium thyrsoflorum* added richness to this valuable collection. We cannot by any means do such a representative and choice group full justice.

Messrs. B. S. Williams, Upper Holloway, London, were strong exhibitors of *Cattleya Mossiæ* and its varieties. *Cymbidium Lowianum* was used as a central specimen, and *Vanda suavis*, *V. tricolor*, *V. t. formosa* (with beau-

tiful gingery coloured sepals and petals edged with mauve) were placed on either side at the back. *Odontoglossum Halli* was good, as were *O. crispum*, *Dendrobium crepidatum* (very fine), and numerous choice *Cypripediums*. *C. Lathamianum*, *C. Harrisianum superbum*, and *C. Lawrenceanum* were all especially fine.

Ludwig Mond, Esq. (gardener Mr. J. O. Clarke), Avenue Road, Regent's Park, set up a varied collection of Orchids, with which were interspersed green foliage plants. *Oncidium Papilio* was attractive; *Odontoglossum crispum* in some varieties was also present, as were good *Cattleya Mossiæ*, *Miltonia vexillaria*, *Dendrobium thyrsoflorum*, *Lycaste aromatica*, *Lælia purpurata*, *Cymbidium Lowianum*, *Odontoglossum citrosum*, and other subjects were all included in this interesting group.

Mr. H. Claes, 55, Rue de Champs, Etterbeek, Brussels, showed a group of *Odontoglossums*. These, naturally, represented only the newest and most improved novelties of the genus, for Mr. Claes is a specialist in this particular genus. He received an award of merit for *O. crispum* var. *Captain Hocken*. The plant bore a raceme of five flowers, but these, if scarce, were stont in substance, and very richly coloured with reddish mauve bars and spots on a white ground. It was decidedly attractive and good. *O. crispum* itself was very rich and varied. *O. Coradineri Madouxianum* takes after *O. triumphans* form, and was especially good. *O. t. latiseptum* is much darker and handsomer even than the type. *O. t. l. var. Lighthouse*, with very dark brown sepals and petals tipped with brilliant yellow, was conspicuous, and attracted considerable interest.

Messrs. John Cowan & Co. put up a very pretty and lightly arranged group, an example that may with advantage be followed by other exhibitors. Fine varieties of *Odontoglossum crispum* and *Cattleya Mossiæ* formed the bulk of the group, with many other fine species and



CYPRIPEDIUM GERTRUDE HOLLINGTON. (Exhibited by Messrs. Stanley Ashton & Co.)

hybrids. *Cœlogyne pandurata* was prominent, and many graceful spikes of *Oncidium sarcodes*.

Mons. Lucien Linden of Brussels had a large number of a large and pure variety of *Phalænopsis amabilis* called *Borneensis*, arranged with their now well known *Hæmanthus*, the contrast being very fine. Some fine *Cypripediums* were also included.

Mr. J. Cypher, of Cheltenham, had a large and showy group, arranged with excellent taste. In the centre some very fine spikes of *Oncidium Marshallianum* towered up even above the Palms, with which the group was backed, and some really grand *Dendrobiums* and *Miltonia vexillaria* were included. A beautiful plant of *Cattleya Skinneri* was prominent, and *Lælia purpurata* was also shown in this well-known exhibitor's best style. *Odontoglossum Andersonianum*, *O. polyxanthum*, *O. triumphans*, and of course a grand lot of *O. crispum* were the best of this genus, a pretty yellow form of the latter being particularly attractive.

Sir Frederick Wigan, Bart. (grower, Mr. W. H. Young), Clare Lawn, East Sheen, fulfilled the promise that his houses of these plants predicted when we visited them a week or ten days ago. He had a wonderful collection of *Miltonias*, which were rich and profusely flowered. From his *Cymbidium* house he had brought some grand plants bearing a round dozen long racemes. *Oncidium sarcodes*, *Odontoglossum Halli*, *O. crispum*, *Cattleya Mossiæ* (grand size and deep colour), together with *Cattleya Skinneri* and *C. S. alba*, *Lælia purpurata*, *Aërides Fieldingi*, *Phalænopsis Sanderiana*, *Saccolabium curvifolium*, and many other good pieces were included in this exceedingly interesting and creditable collection.

A marvellously fine exhibit of *Vanda teres* Rothschild's variety came from Lord Rothschild (grower, Mr. G. Reynolds), Gunnersbury Park, Acton, W. These were the picture of health, and made a strikingly beautiful feature at one end of the long table devoted to Orchids in the largest tent. The group was arranged with perpendicular frontage, and as nearly all remarked, it was "perfectly marvellous."

Messrs. Charlesworth & Co. of Heaton, Bradford, also showed remarkably well. Some very richly tinted forms of *Lælia purpurata* backed up their large group, and a grandly grown plant of *Lælio-Cattleya Hippolyta* was given a cultural commendation. This plant carried twenty-eight flowers on three spikes, showing more plainly than usual the true habit of this fine hybrid. The varieties of *Cattleya Mossiæ* were very fine, *C. M. superba* being an especially fine thing. The spikes of *Odontoglossum Halli* were fine and varied. *Lælio-Cattleya callistoglossa* was represented by a fine plant carrying four large flowers. *L.-C. Ivernia* is a lovely thing, a cross between *L.-C. callistoglossa* and *Lælia tenebrosa*, the veining of the lip and sepals reminding one of the latter. The pretty *Masarmini* was represented by a fine specimen. *Lælia purpurata* Sunray is an exquisite plant, with rich lip and sepals tinged with purple like *L. p. Backhousiana*. A fine plant of *L.-C. Mozart*, with eight flowers, was very interesting, and another plant of better variety was also shown. *Cattleya Mendeli* Aurora, *C. partheniana vernalis*, *C. Mendelli* Brilliant, and *Lælio-Cattleya G. S. Ball* were also good.

Messrs. Hugh Low & Co., of Bush Hill Park, were to the fore with a large but very flat group, consisting principally of *Cattleyas*, *Lælias*, and *Lælio-Cattleyas*. *Cattleya Mossiæ* Sir Alfred Milner is a very distinct variety, a light heliotrope shade on the sepals and petals being noted that is very unusual. *C. Mendeli* His Majesty is a large and perfectly formed variety, like a glorified *C. M. grandiflora*, a perfect flower; *Cypripedium Youngiæ*, a cross between *C. bellatulum* and *C. Hookerianum Volonteanum*, shows up well, the foliage of the latter fine kind being almost exactly reproduced in the hybrid; and there are also very fine specimens and varieties of *C. Lawrenceanum*, *C. Goweri magnificum*, and *C. Curtisi*. Fine arching spikes of *Oncidium Marshallianum*, *O. sarcodes*, *Cymbidium Lowianum*, and *Odontoglossum Edwardi* were the only break to the flatness of this group; plants such as *Oncidium Kramerianum* and others, that would have improved it had they been kept up, being set down much too low.

J. Rutherford, Esq., of Bearwood, Blackburn (grower, Mr. J. Lupton), put up a small but showy group, consisting of fine *Lælia purpurata*, *Cattleya gigas*, and *Miltonia vexillaria*; a pretty, but thin, form of *Odontoglossum crispum*, named *deliciosum*, was also shown.

Messrs. Jansen & Putneys of Antwerp showed about a dozen very fine *Odontoglossums*, the best of these being a fine *O. triumphans aureum*, with very large and well defined blotches; *O. crispum* var. *Giant*, a large but not particularly well shaped variety, and a very pretty and distinct form of *O. Ruckeri*. *Cattleya intermedia* var. *Bijou* is almost an albino; indeed, it is prettier than many white forms, having a slight suffusion of rose. A weak plant, but a very fine variety, of *O. Loochristiense* was also shown.

J. Leeman, Esq., of Heaton Mersey, had a beautiful group of *Odontoglossums*. *O. crispum* the *Nizam* is a grand flower of immense size and great substance, and there were many others unnamed but almost equally good. *O. Adrianae* var. *Imperator* is a very rich thing, and *O. A. Lindeni* is one of the deepest marked forms we have seen. *O. crispum* Little Sun has a yellowish tint that is pleasing, but hardly distinct enough, and several others were well worthy of mention did space permit. It was a grand group in every respect.

A. A. Peeters, of Brussels, showed a small collection of Orchids, including two very pretty varieties of *Odontoglossum Rolfæ*, *O. crispum* Queen Victoria, *Cattleya Kirchoveana* and *Odontoglossum Adrianae*. The Hon. W. Rothschild showed *Lælio-Cattleya Hippolyta* and *L.-C. Dido*.

W. Thompson, Esq., showed a fine *O. crispum* named *Hebe*, pure white on the sepals and petals, the lip spotted with brown.

Mons. Jules Hye of Ghent showed *Odontoglossum Rolfæ*, a very clear and beautiful form of this hybrid, with bright markings; *O. crispum* *Idole*, a pretty spotted form; and *O. crispum* *Phryne*.

Lieut.-Col. Shipway had a pretty *Odontoglossum Deunisoniæ*.

Captain Holford showed a finely spotted *Odontoglossum crispum* *Ian*, and *O. Adrianae* Mrs. Menzies, the latter rather broader than usual in the segments, and of fine colour.

E. Ashworth, Esq., showed a pretty hybrid *Odontoglossum* with the habit of *O. crispum*, and pretty white flowers spotted with red.

Roses.

From Messrs. Ben. R. Cant & Sons, The Old Rose Nurseries, Colchester, there came a bright and clean collection of pot Roses, carrying a fine crop of strong exhibition flowers. Mrs. Cocker was particularly strong and good, so was Mrs. Sharman Crawford, Général Jacqueminot, Ulrich Brunner, Madame Hoste (Tea), together with Dundee Rambler, crimson China Roses, and certain showy, double-flowering Brier Roses. The yellow Harrisoni Brier was also included. The group was arranged to tower backward from the front, culminating in a high centre at the back extremity.

Messrs. W. Paul & Son, Waltham Cross, Herts, set up a handsome Rose group, really exceptionally fine both in the quality of the plants exhibited and in the matter of tasty arrangement. Tall standard Tea Roses in pots occupied the back, and were raised up in pots to a towering height. In front came others of lesser size, amongst which were Crimson Ramblers in bushy style, and dwarfier plants in front. One of the finest Roses here was a new Polyantha variety named *Lenchster*, with smart, glossy, dark green foliage, quite thick, above which were expanded the lovely cymose clusters of rosy edged single flowers. The centre of these flowers, which are 2 inches in breadth, is white, or rather yellow with a broad white halo. The plants seen at a little distance appear like some refined variety of pink double *Cratægus*. Other good varieties were *Soleil d'Or*, H. T. Tennyson; a new pink; *Medea*, G. Nabonnand, *Medea*, &c. In the forefront were cut Roses in stands, the whole forming a most excellent and attractive feature.

A varied collection of Roses in pots came from Messrs. Frank Cant and Co. of the Braiswick Nursery, Colchester. The blooms upon the healthy, stocky plants, were well opened, and displayed a grand tone of colour. The new H.T. *Madame Ravary* was particularly good in this respect, being a much richer colour than the well-known *Gloire de Dijon* when the latter is seen fresh and at its best. *Anna Chabron* is a new Tea variety of a beautiful rosy pink colour, creamy toward the base of each petal. *Lady Roberts* is also a new Tea, almost like *Maréchal Niel* in colour, only deeper. Mrs. John Laing, Lawrence Allen, L'Innocence, Mrs. Ed. Mawley, White Maman Cochet, *Thalia*, and *Ethel Brownlee* were a few of the others whose good qualities attracted particular attention.

Mr. G. Mount, Canterbury, made a charming display of cut Roses backed with some fine plants of *Crimson Rambler* in pots. The blooms were large and beautifully finished. The boxes of *Caroline Testout*, *Maréchal Niel*, Mrs. John Laing, Ulrich Brunner, and Baroness Rothschild were all staged in the orthodox way, while these were relieved by vases of blooms on long stems, *Catherine Mermet*, *Caroline Testout*, *Anna Olivier*, *Niphetos*, and *La France* being remarkable for their fine flowers and capital foliage, the effect of the *Crimson Ramblers* greatly enhancing the beauty of the exhibit.

Mr. W. Rumsey, Joynings Nursery, Waltham Cross, staged an extensive display of cut Roses, comprising twelve boxes of cut blooms, and a number of vases. The blooms of *Maréchal Niel* were large, and of excellent colour, while *Niphetos*, *Golden Gate*, *Maman Cochet*, *L'Idéal*, Mrs. Rumsey, and Charles Lawson were conspicuous. The *Noisettes* and *Celine Forestier* were pretty, also *Crimson Rambler*, *Polyantha Mignonette*. A good box of *Niphetos* (Tea) was also shown, as well as a miscellaneous variety of Teas.

Messrs. Paul & Son, The "Old" Nurseries, Cheshnut, exhibited a fine group of Roses in one corner of the largest tent. The plants were in pots, and were most varied in size as well as shape. In many cases the plants bore magnificent large blooms; *La France* is not the least beautiful. *Madame de Watteville*, with charming flowers, Mrs. Paul, a fine flower, also *Marquise Litta* and *Souvenir de President Carnot*. *Crimson Rambler*, not so large, of course, in its individual blooms, is showy as a plant; so is *Psyche*, a climbing Rose, white, faintly tinted pink. Mrs. J. W. Grant, both in its ordinary and climbing habits, was a conspicuous variety. *Queen of Sweden*, a new Tea Rose, was good; the bloom is of lovely form and large enough, colour white, tinted apricot in the centre; it has substance, and should be noted as most promising. The exhibit was tastefully and lightly arranged. The beautiful new H.T. *Lady Battersea*, of which we give an illustration, was also included.

A pretty display of new and other Roses were staged by Mr. G. W. Piper, Uckfield, which included plants of Liberty, a good crimson; the well-known Sunrise, Maman Cochet, in splendid form; Bridesmaid, Mrs. G. W. Grant, and Catherine Mermet.

A large group of Moss Roses, exhibited by Mr. E. Hill, gardener to Lord Rothschild, Tring, proved a novelty at this show, and as such was duly appreciated. The chief varieties were Reine Blanche, Henri Martin, Little Gem, and the common Moss. The plants were short and well flowered.

Insectivorous Plants and Cacti.

An exhibition which formed a feature of especial interest was a collection of beautiful Cactaceous and succulent plants from the renowned Swanley firm, to wit, Messrs. H. Cannell & Sons. Here we noted Echinocactus Emoryi, saylionis, cylindraceus, Penisulæ, besides pilosus, Junori, viridescens, visnaya, ornatus, and other interesting species and varieties. Cereus giganteus was also here; besides candicans, Olfersi, acidus, peruvians and p. monstrosus; Echinocereus rigidissimus, Echinopsis multiplex cristata, E. zuccariana, together with Mammillarias elegans, sanguinea, Nicholsoni, elephantidens, decipiens, and Pfeifferi. The collection, regarded as a whole, was one of the most select and handsome we have seen for a long while. Opuntias, Gasterias, Yuccas, Dasylirions, Agaves, Haworthias, Pilocereus, &c., were also represented,

Tree and Shrubs.

From the Richmond Nurseries, Mr. John Russell brought a handsome collection of Acers in pots. The glowing tints of colour, and the beautiful forms of the leaves, contribute to make these plants highly effective when seen *en masse*. Here were such fine varieties as Acer sanguineum, with leaves as red as the petals of Pyrus japonica; A. refuscens, bright green; A. japonicum filicifolium, with deeply cut leaves; A. palmatifidum and its varieties rubrum and reticulatum. A fine variety is seen in A. dissectum atro-purpureum (very red); also A. japonicum aureum and A. variegatum with rosy blotched leaves.

Messrs. Fisher, Son & Sibray, Ltd., Royal Nurseries, Handsworth, Sheffield, had a magnificent group nearly 100 feet in length, in which Japanese Maples largely predominated. These were exceedingly bright, and varied in size from miniature plants in 5-inch pots to large specimens some 8 feet high. This group also contained miniature hardy Conifers in choice variety, and specimens of the hardier Dracaenas of handsome shape. The whole was arranged in telling groups, and was very bright and effective.

Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, had a score or so of Yew and Box to illustrate examples of clipped trees. These were made in imitation of fowls, tables, &c., and exhibited some skill on the



MESSRS. VEITCH'S GROUP OF PHYLLOCACCI.

(Exhibited at the Temple Show.)

making this a splendid group for the study of this great natural order of plants.

A fine exhibit of Kalanchoe flammea came from Messrs. Jas. Veitch and Sons, Ltd., Chelsea. The plants were growing in 5-inch pots embedded in a groundwork of Maidenhair Ferns; the flowers proved attractive during the show. The well-known collection of hybrid Phyllocacti, which have often been so much admired at this show, were again very much in evidence, and a grand display of blooms could be admired. The delicate tints as seen in Gem, Epirus, Virginalis, Thalia, Favourite, Syrens, Oris, Jessica, and Admiration, have to be seen to fully appreciate their merits; while the brighter varieties that enhance the beauty of their neighbours are Brilliant, Romeo, Isabel Watson, Pluto, Euranian, Niobe, and Cyrene. Many of the plants were carrying eight and ten flowers, and the group formed a brilliant display.

A special feature of the exhibition was the splendid collection of insectivorous plants staged by Mr. H. J. Chapman, gardener to R. I. Measures, Esq., Camberwell. The exhibit attracted much attention, and consisted of Nepenthes mixta, a good plant. The Sarracenias were, however, the chief feature, for splendid examples of S. Drummondii, S. D. alba, S. Tolliana, S. Swainiana, S. Stevensi, S. Atkinsoni, and many others. The Droseras were also very interesting, and all the plants were well developed.

Mr. A. J. A. Bruce, The Nurseries, Edge Lane, Chorlton-cum-Hardy, was present with his representative collection of Sarracenias. Here was included S. Farnhami, S. Patersoni, S. Courti, S. Flambeau, Williamsi, Atkinsoni, Chelsoni, and others. Cephalotes follicularis and Darlingtonia californica were also in this exhibit, which created a good deal of notice and interest.

part of the manipulators. This firm also put up a large group, or rather a line of groups, in which Lilacs, well flowered, Brooms in variety, Azalea mollis, and Maples, formed an important part. Messrs. W. Fromow & Sons, Sutton Court Nurseries, Chiswick, W., exhibited a large and telling group of Japanese Maples. Every variety worth growing this group contained, the purple-leaved kinds being very effective. Messrs. T. Cripps & Son, Tunbridge Wells: this firm had a very large and handsome group composed of Maples; the specimens were of large dimensions and splendidly coloured. A novelty appeared in Acer colchicum aureum, a sport from colchicum rubrum. The leaves are lovely in shades of yellow and brown. The finer-cut leaved section in this group were delicate and lovely in formation.

Messrs. Carters of High Holborn had a most unique arrangement in Ferns, which were trained to form the appearance of elephants. In this group, too, was a varied selection in the art of Japanese tree-dwarfing, also specimens of clipped Yews. These were well done. Messrs. Wm. Cutbush & Son, nurserymen, Highgate: a most imposing collection of clipped trees, mostly Box and Yew. The shapes were almost bewildering in their number and form. Whatever may be thought of the practice of so manipulating shrubs, there is no doubt about the skill of the producers. It seems as if a taste once popular is becoming fashionable again. A circular bed in the open was made by Mr. Paul Erselius, Romford, Essex, with his fine double white Petunia Charlotte. The blooms are immense in size, double, and pure white. As a market plant it should be valuable.

Messrs. James Veitch & Sons, Ltd., Chelsea: this firm exhibited a quantity of Bamboos in tubs. This ornamental group was faced by a most brilliant bank of Nasturtiums. Each variety bore a different

name, and as a whole the strain is dwarf good. A miniature Japanese garden was produced by Mr. S. Takagi, Yamato, Newburgh Road, Acton, W. It was principally of trees which looked scores, may be hundreds, of years old by the gnarled formation of the trunks, yet the specimens were in reality so small that each tree could be carried easily. As an art this tree-dwarfing is remarkable.

Messrs. Richard Smith & Son, The Nurseries, Worcester, whose group formed a striking display of hardy shrubs, was composed of specimens of all sizes. Acers, as in most of the hardy plant arrangements, figured extensively. These were bright and effective.

Messrs. J. Waterer & Sons, Bagshot, had a huge group of hardy plants, the most effective portion of which was the bank of Rhododendrons in bloom. All the choicest varieties in cultivation were included. Pink Pearl appears to be a new kind. Its huge blooms are well formed and choice. W. E. Gladstone was not the least effective variety of the whole. Another excellent new variety is Gemer Waterer, light blush, of rare beauty. It bears huge trusses of bloom. Kate Waterer, lovely pink with yellow blotches, is a striking variety. Fleur de Marie has large trusses of bright rose flowers. Duke of Connaught, white with yellow blotches, is very distinct and rich.

Messrs. Barr & Sons, King Street, Covent Garden, had specimens of pigmy trees after the Japanese fashion. These were remarkably quaint in some cases, indeed they were noble. Japanese Maples, Cupressus, Elms, and other genera were represented in this large and attractive, though peculiar display.

Dwarf Japanese trees formed an attractive exhibit from Mrs. Hart, Fairlawn, Totteridge, Herts. The trees were trained in the most fantastic shapes, such as storks, ships, junks, &c.

Plants and Flowers.

In the large (No. 5) tent, Messrs. Wm. Cutbush & Sons, of Highgate Nurseries, London, N., were once again present with an effective group, in which Carnations were the leading feature. Many new varieties were staged, and perhaps none excelled the glowing scarlet variety named Herbert J. Cutbush. We have referred to this in terms of high praise on former occasions. The form, substance, and brilliance are as fine as we have ever seen, and it is, moreover, delightfully odorous. Other new varieties to note are Fanny Wilcox, a soft pink; Henry James, deep reddish rose; and Lady Mimi, deep pink. The new Cecilia is one of the finest of yellow Carnations. The group also contained a very large quantity of Malmaison Carnations, including Princess of Wales, Princess May, and other varieties. Calla Elliottiana, Ericas, and Crimson Rambler Rose further added to the effectiveness and interest of this charming group.

Messrs. James Carter & Co., High Holborn, London, occupied the whole of the space in the centre of tent No. 1, one of the largest individual exhibits on the ground. The Victoria Prize Calceolarias, with flowers almost 2½ inches across, were staged alongside a "Pigmy" type which this firm has introduced, and the contrast is striking. The miniature form was exceedingly pretty. The strain of Gloxinias known as the Invincible Prize were healthy and wonderfully fine. Along with the Calceolarias and Gloxinias they have a fine batch of a new annual Delphinium in pots. Strong, double Petunias were also shown.

Mr. H. J. Jones, Ryecroft Nursery, Lewisham, occupied the same space in tent No. 4 as last year, with many beautiful new show and decorative Pelargoniums, single and double Begonias, late-flowering Tulips, Ivy-leaved Pelargoniums, and though late some remarkably fine flowers of Daffodils and Narcissus. We noticed a beautiful new Ivy Pelargonium Baden Powell; its large distinct flowers were very beautiful, of a soft mauve shade. Leopard had a ground colour of clear pink, the upper petals being heavily blotched crimson. In show and decorative varieties Miss Jessie Cottee was a good salmon rose, with white centre, and having a decided maroon blotch on the upper petals. Other meritorious vars. were Lady Primrose, Mrs. A. Hemsley, and Mrs. S. T. Petts. The single and double Begonias were remarkable for their erect habit, fine rounded form, and abundance of flowers, which are so well known in the Ryecroft strain. Late Tulips are strong and very showy, conspicuous amongst these being *T. elegans alba*, *fulgens*, and the var. *e. variegata*, *Vitellina*, *Billietiana*, *Sunset*, *Picotee*, and the curious green Tulip *viridiflora*; also many beautiful varieties of the Darwin Tulips. There were also in evidence such subjects as Camassias, Anemones, Gladioli, &c.

Messrs. Cannell & Sons, from The Home of Flowers, sent bedding Pelargonium named King Edward VII. This is described as a sport from Henry Jacoby. It is very dwarf, has white and streaked stems like West Brighton Gem, and has large trusses of crimson flowers, identical to its parent. The same firm also staged three distinctly coloured Myosotis—white, blue, and pink. These all grow upright, in columnar form. "Cannell's Cannas" were here again in evidence, and grand plants they were. The following are new and distinct kinds:—Beauté Poitevine, Comte de Bonchard, Aureole, Député Ravarin, President McKinley, Alliance, Elizabeth Hoss, Pæstum, Sister Dora, Vice-President Savage, Jean Tissot, Auguste Chantin, Souvenir de President Carnot, Duchess of York, M. Souleyberand, Alphonse Bonvier, Meteor, Ville de Poitiers, and Queen Charlotte. They had also Semaphore, Brilliant, Leon Vassiliere, Madame L. Leclert, J. T. Lovett, Madame la Baronne, P. Thenard, Rose Christy, and others. Coleus Kaiser Wilhelm also came from this firm.

Messrs. Webb & Sons of Stourbridge had a fine display of Gloxinias and Calceolarias, illustrating their strains of these popular flowers. The plants have been taken from the collection now growing for seed in Messrs. Webb's own seed houses at Wordsley, and are representative of the fine forms and colours which may be produced from this strain. The Calceolarias show a profusion of bloom, the flowers being large, well formed, and in great diversity of beautiful colouring. The Gloxinias, too, display good habit, combined with free-blooming characteristics, whilst for size and beauty of colour the flowers are quite of the first order of merit. This exhibit includes a group of a new seedling Gloxinia, named "Stanley," which Messrs. Webb have recently raised; it is very dark crimson in colour, and of sturdy habit.

Tulips in great variety came from Messrs. Hogg & Robertson, 22, Mary Street, Dublin. Their large collection comprised Tulipa species and numerous beautiful varieties of the May flowering "Cottage Garden" Tulips. We noted *T. fulgens* as specially fine; *Gesneriana aurantiaca*, deep orange red; and its varieties, Bouquet d'Or, orange yellow; Bridesmaid, cherry rose; Rosalind, bright rose; rosea, rose with blue base; Spathulata, rich crimson-scarlet; and Stella, deep carmine. They also staged bunches of Tulipa Golden Crown and Golden Eagle. *T. Mrs. Robertson* was on show, and the green Tulip, *T. viridiflora*. The Maiden's Blush (*T. Picotee*) was exquisitely beautiful; as also La Candeur, macrospeila, Goldflake, Isabella, La Panachée, Nigrette, and Mawieana. The new variety named Miss Jekyll is an extra fine white with a rich blue base. The collection was gorgeous, to say the least.

Messrs. Sutton & Sons, of Reading, were again forward with their magnificent strain of Calceolarias, which formed a diversified and gorgeous bank at one end of their large exhibit. The plants were very dwarf, and the healthy foliage completely hid the pots. The flowers, too, were large, spreading out in massive handsome heads of bloom, each of grand form. Gloxinias formed another striking feature of the Reading firm's exhibit. The variety named Her Majesty, a matchless white sort, was admirably staged; as were others of the Giant Gloxinias in numerous named varieties. Another feature of this exhibit is the pretty and effective Cineraria stellata, of which we furnish an illustration, and which was first introduced by Messrs. Sutton in 1898. Although when shown at the R.H.S. meeting at the Drill Hall in April, 1898, its great characteristics were not appreciated by many, yet it has of late become exceedingly popular, both as a pot plant for the decoration of the conservatory, as well as for cutting. Nemesias, fibrous Begonias, Pansies, Myosotis, Streptocarpus Wendlandi, and hybrids, together with Aquilegias, Bermuda Lilies, and Palms, composed a display of fascinating attractiveness.

Mr. H. B. May, Dyson's Lane Nurseries, Upper Edmonton, set up a group of flowering and foliage plants. Zonal Pelargoniums King of Denmark, pink, and Decorator, scarlet, and others. Ivy-leaved sorts were also included, and occupied the front, along with which were interspersed Statice profusa, Aspleniums, and Gymnogrammas. In the centre, towards the back, were large, massively flowered plants of Crimson Rambler Rose. On either side of this were beautiful Jackmanni Clematis of the varieties named Marcel Moser and Nellie Moser. These are exceedingly lovely, the former lavender, the latter rose-mauve with white edges. Ferns, Palms, and Crotons completed an effective and very tasty group.

Messrs. J. Veitch & Sons, Ltd., Chelsea, were once again forward with their splendidly grown Caladiums. There had been talks that these samples would be absent this year from the show, but a finer lot have seldom been brought forward. Much credit is due to Mr. G. Tivey for his efforts with these plants under all the adverse conditions of growth in London's suburbs. The following varieties were shown:—Pantia Ralli, red, with white spots; The Mikado, crimson, green edge; Mdle. Schmidt, crimson with broad green edge, rosy speckled; Silver Cloud, cream with green flakes; Baron Adolph de Rothschild, deep crimson with spots of pink; Madame John Box, rosy centre and beautiful cream and green border; Candidum, white ground, green veins; Henry Lovatt, crimson centre, suffused with cream and edged green; Gaspard Crayer was also very fine, as were others that have to be omitted. In front of the Caladiums were groups of Orchids and choice exotic foliage and flowering plants. Lælio-Cattleya Digbyano-Trianæ with pale mauve fringed lip was here, as was L.-C. Zephyra, with creamy petals, L.-C. Hippolyta, L.-C. Aphrodite alba, Lælia Latona, and other splendid hybrids. Anthurium crystallinum, A. c. Illustre (a beautiful subject), Phrynium variegatum, Dracæna Exquisite, Ficus Parcelli, with Ericas, Ananassa sativa variegata, Ferns, Richardias, and Ficus repens variegata formed the more select portion of this fine group.

From Mr. J. Russell, of Richmond Nurseries, came a miscellaneous group of foliage and flowering subjects, including Azalea sinensis in variety, standard Laburnums, Laburnum Wateri, Eurya latifolia, Lilacs, Viburnum macrocephalum, Vitis heterophylla variegata, Hedera Helix variegata, Phyllostachys, Platanus in variety, with Japanese Maples, Crataegus, and Azara microphylla. The group was tasty and well arranged.

Messrs. Richard Smith & Co., of Worcester, staged balloon-trained Clematis of gigantic size and all splendidly flowered. Interspersed between these large pot Jackmanni Clematis were bushy and flower-clustered Crimson Rambler specimens. These were also especially fine. The best Clematis varieties: Marie Lefebvre, Madame Van Houtte,

Sensation, Glory de St. Julian, Beauty of Worcester, Mrs. G. Jackman, Excelsior, and Fairy.

Mr. Charles Turner brought from Slough his wonderfully trained Regal Pelargoniums. These must have come as a surprise to not a few, for the exhibit was stronger and better than ever. Many of the specimens were well over a yard in diameter, and literally crowded with beautiful trusses, so much so that a pencil could scarcely have been got between one truss and another. Surely the best of past traditions are upheld even to-day! But Roses were the principal exhibit. Massively spread-out plants of Crimson Rambler, Camille Bernardin, crimson; Juno, pink; Perle d'Or, creamy orange; Spenser, pink; L'Innocence, soft creamy white, and many others were shown. At the east end were a collection of Indian Azaleas in variety.

Carnations were staged from the Right Hon. Lord Hillingdon (gardener, Mr. A. R. Allan), Hillingdon Court, Uxbridge. These bore numerous and very finely formed flowers, especially the Malmaison varieties named Mrs. M. Smith, Lady Ulrica, Lady Grimston, rosy red; and Prime Minister; the Old Blush was also good. The collection was most attractive.

Caladiums were sent up in good style again from Messrs. J. Peed and Son, West Norwood, S.E. The plants this year were considerably smaller than they usually are from this firm, but colour was better than usual. The best were Duchess of Fife, carmine veins, whitish ground, and green edge; Rose Laing, green veins and rosy red grounding; Sir H. Irving, broad green edge, ruddy veins, and dun coloured central part. Especially fine was Roncador, candidum, Silver Cloud, Icaris, L'Automne, Rio de Janeiro, W. Pfitzer, Clio, and Triomphe de Comte. The collection was a large one, and set up to the highest advantage.

Messrs. Young and Co., Stevenage, had a pretty exhibit of hardy flowers, Pansies, Violas, and a few Cacti. The Violas, were certainly the feature of the exhibit. A few of the best were Formidable, Love, Kitty Simons, Yellow Prince, and Mrs. H. Bellamy. The Pansies were also of good size and substance. The rock plants used as an edging were also bright, though somewhat marred by the too liberal use of cocoa-nut fibre. Hardy out flowers, shrubs, and Rhododendrons came from Messrs. W. H. Rogers & Son, Ltd., Red Lodge Nursery, Southampton. The white receptacles used as containers were anything but suitable for such subjects. The Rhododendrons included good heads of Broughtoni, A. C. Rogers, Cynthia, Comte de Gomer, Gem, Meteor, and Grand Arab. Lilacs in single and double varieties were also conspicuous, as were also Viburnum plicatum, Andromeda formosa, and a pretty collection of Acers. Messrs. V. H. Gauntlett & Co., Japanese Nurseries, Redruth, made a pretty display of Rhododendrons, chiefly of the Himalayan types, and a few other subjects, the trusses of R. Ancklandi and R. Edgworthi being very fine, while the yellow R. Campylocarpum was conspicuous; others deserving of note were R. Standishi and R. Falconeri the scarlet Embotrium oocineum, with Andromeda formosa, and Solanum crispum being all worthy of attention.

Messrs. R. Smith & Co., Worcester, made an extensive display of hardy flowers, the front of the bank being tastefully arranged with trails of Clematis montana and Lotus peltorhynchus. Some of the best groups were Trollius Orange Globe and T. grandiflora, Thermopsis montana, Primula japonica, and Dianthus alpina; while the rock plants, Convolvulus Cneorum, Androsace villosa, A. Chumbergense, and Nertera depressa, formed a pretty front, nor must the Asperula superbosa be overlooked. Mr. W. B. Hartland, Ardcairn Bulb Grounds, Cork, staged a good collection of late May-flowering Tulips, and notwithstanding their long journey the flowers were in good condition. To enumerate a few of the best one had to include T. fulgens maxima lutea, which is really very fine; T. Didieri alba, T. gesneriana Ixioides, T. G. Fairy Queen, a delicate variety; John Ruskin and The Fawn are also similar, but in distinct shades. The dark G. Nigrette is very attractive;

Margoleta, Gold Flake, and York and Lancaster were excellent, certainly a noteworthy display from the Emerald Isle, which demonstrates in no un mistakeable fashion the beauty of these flowers, and their decorative value at this season of the year.

From Messrs. Watkins & Simpson came a pretty little table of their hybrid Latanias, which are exceedingly dwarf, and appear to flower as freely as the older type, while the colours are bright and attractive. A few pots of Nasturtium Queen of Tom Thumbs were worth attention, for the foliage is variegated, with crimson flowers; it is said to produce 85 to 90 per cent. of true variegated plants from seed. A table of herbaceous Calceolarias came from Mr. J. Buss, gardener to A. Meyers, Esq., West Hill Lodge, Epsom. They represented a good spotted strain, clean, and well developed. Mr. E. S. Towell, Windmill Road, Hampton Hill, staged an exhibit of his oukoo flowered Zonal Pelargonium Fire Dragon. Some were in pots, but the chief feature was a crown formed entirely of cut blooms of this variety.

Mr. Wm. Iceton, decorative florist, Park Lane Nursery, Putney, S.W., arranged a nice decorative group of such useful plants as Lily of the Valley,

Ericas, Caladinms, Adiantums, Begonias, Cordylines, Eurya latifolia, Negundo variegatum, Phyllostachys, and Palms.

Mr. J. R. Box, West Wickham, displayed a large group of herbaceous Calceolarias, which indicated a good dwarf strain, with great variety of colouring; the plants were undoubtedly well grown. A good group of Carnations was staged by Mr. H. T. Dixon, Woodside Gardens, Hailsham, in which were plants of Cecilia, Major-General Baden Powell, Duke of Alva, Lady Hermione, F. Wellesley, and Mrs. R. Sydenham in good form.

Messrs. T. S. Ware, Ltd., Feltham, brought out their collection of single and double Begonias in all their full wealth of flowers, and though they were grown well last season, the plants and flowers this year surpassed them. A few of the best were Mrs. Robert Sadler, a lovely edged variety; Lord Kitchener, rich crimson; Queen Alexandra, Mr. Henry Clark, Mrs. W. G. Valentine, Mrs. Elsie Lewer, Imbricata, and Masterpiece. The singles included Miss Nellie Thackeray, Penelope, Miss Julia Grant, Dora Brookes, and Plutarch.



SPECIMEN CINERARIA STELLATA.

(Exhibited by Messrs. Sutton & Sons.)

The Clematis from Messrs. G. Jackman & Son, Woking, were very fine. It was composed of a group of some two dozen large specimens, each trained on a balloon trellis and intermixed with less formal plants. The individual blooms in some instances were magnificent, the plant of Fairy Queen, for example, had twenty-two blooms measuring some 10 inches across. The colour of this sort is blush faintly barred with rose. King Edward VII. is a fine new hybrid with remarkably large lavender coloured blooms. Countess of Lovelace, double lavender, is rich, and a magnificent light flower is Madame Van Houtte. Princess of Wales, too, is a striking kind; the specimen in this group was a mass of blooms some 4 feet across. The new hybrids from *C. coccinea* raised by the Woking firm were in evidence. Countess of Onslow and Admiration were not the least striking.

Messrs. James Veitch & Sons, Ltd., Chelsea, had a remarkably fine display of Rhododendrons, Azaleas, Pæonies, and other hardy plants. A huge bush of Sigismund Rucker, a variety of the first-named, was most attractive. Wistarias in variety, Hydrangeas in excellent kinds

Redman, gardener to Mrs. Farrer, Ingleborough, Lancaster. Pans of *Morisia hypogaea*, *Gentiana acaulis*, and *Ramondia pyrenaica* were excellent, while Primulas, Violas, *Cypripedium*, Irises, and *Saxifragas* formed a choice exhibit.

Mr. W. J. Godfrey staged baskets of his new *Pelargonium Emanuel Lias*, which were well grown and full of flower; the other varieties staged in the same way were President Faure and Wilfred H. Godfrey, also a basket of *Tropaeolum Exmouth Glory*, a yellow variety, said to be sweet scented.

The Misses Hopkins, Mere Cottage Gardens, Knutsford, made a good display of herbaceous and alpine plants, but they were rather too crowded to be effective. Some of the chief subjects were a new Daisy named Alice, a very delicate pink. Some of the old double *Polyanthus* were also interesting, as were also a collection of *Saxifragas*; Primulas in variety, a few quaint Violas and Aubrietias, forming the major part of the display.

Mr. W. R. Newport, Hillingdon Heath, Uxbridge, staged a bank of



H. T. ROSE LADY BATTERSEA.

(Exhibited by Messrs. Paul & Son The "Old" Nurseries, Cheshunt.)

were also well grown. The Polyantha Rose named Electra is a delicately tinted creamy white, and choice looking in a group where all is good.

Malmaison Carnations formed a pretty corner in tent 3 from Messrs. Hugh Low & Co., Bush Hill Park, Enfield. They were effectively arranged in a bed of *Asparagus plumosus*. The blooms of Mrs. Martin R. Smith, Princess of Wales, Gemma, Iolanthe, Lady Grimston, Churchwarden, and Princess May were in evidence, as was also the sensational American variety Mrs. Thos. W. Lawson, but it was fairly eclipsed here by the other varieties in every sense.

A handsome table of Tulips, Irises, Narcissi, and Gladioli were staged by Messrs. B. S. Williams & Son, Upper Holloway, N. The whole exhibit was one glaring mass of colour. To enumerate all the good things would take up too much space, but a few of the more attractive were noted. In Tulips, Golden Beauty, *T. retroflexa*, Maiden's Blush, and *T. viticella* represented some of the best, but the collection of Darwin and Parrot forms must not be neglected, for they are particularly good. Large forms of Spanish Irises in variety, *Camassia esculenta*, *Anemone fulgens*, Fortune's Lily of the Valley, *Ixias*, *Ornithogalum arabicum*, and *Gladiolus Blushing Bride* lent sufficient variety to make the exhibit attractive throughout.

A pretty little group of Alpines were staged tastefully by Mr. Geo.

Lobelia Newport's Model, a good dwarf variety, the colour being a deep royal blue with a conspicuous white eye, the exhibit being edged with tricolor *Pelargoniums* and *Pyrethrum aureum* in pots. Mr. R. C. Notcutt, Broughton Nursery, Ipswich, had a good table of late-flowering Tulips and a few other subjects, the whole being lightly displayed. In Tulips the florists' bybloemen and bizarres were largely staged, and the Darwins were also very much in evidence, while the Parrot varieties in their gorgeous colours were judiciously employed. A few vases and pots of *Trollius*, *Phloxes canadense*, and *anemones*, with other plants, formed a quiet and pleasing front.

A most pleasing exhibit after the Tulips was that from P. Purnell, Esq., Woodlands, Streatham Hill, who staged a collection of *Sempervivums* and alpines; the green of the plants, relieved only by a few solitary flowering plants, had an excellent effect, the blue *Gentian* being the brightest colour visible. The *Sedums*, *Sempervivums*, and *Saxifragas* were remarkably well grown, the plants looking as though they enjoyed life at Streatham Hill.

A wonderful display of Primroses, Polyanthi, and Auriculas were arranged by Messrs. Storrie & Storrie, Dundee. The groundwork of the table was composed of plants in pots, relieved by four trophies of the various sections. The yellow Auriculas deserve special mention, Uranns, Perseus, Zens, Osiris, Pollux, and Vega being all good

forms. The Polyanthi were also good in size and colour, especially the yellows; in fact, all were good, and appreciated only by all who saw them, for the exhibit takes us back a few weeks here in the South, apart from its superiority.



KELWAY'S TREE PEONIES.

Mr. Robert Sydenham, Tenby Street, Birmingham, made a tasteful exhibit of Sweet Peas, arranged in vases with Maidenhair Fern and Gypsophila. The flowers were well grown and arranged well also. Gorgeous, Lovely, Lady Grisell Hamilton, Lady Mary Currie, Her Majesty, Emily Henderson, Blanche Ferry, Salopian, and Navy Blue were in the best possible form.

From Messrs. R. Veitch & Son, Exeter, came a small exhibit of choice plants, in which *Helichrysum rupestre*, *Myosotidium nobile*, *Achillea serbica*, *Trimorpha pygmaea*, and *Androsace Chumbiense* figured conspicuously. Other plants consisted of a few Cacti, *Edwardsia grandiflora*, and *Hydrangeas Mariesi* and *Ajisai*.

Mr. John Forbes, Hawick, had an exhibit of his *Begonia Caledonia* with a few plants of *Gloire de Lorraine* worked in for effect, while the background was formed with a tartan, which did not appear to help the exhibit to any material extent.

Messrs. G. Jackman & Son, Woking, Surrey, occupied the end of tent 3, with a good exhibit of herbaceous plants, and Clematis; the latter included vases of the hybrids of *coccinea*, while large pans of *Geum Heldreichi*, *Alstromeria Erembouliti*, *Anemone sylvestris fl.-pl.*, *Trollius europaeus*, *Aquilegia Stuarti*, and *Primula japonica*, while such subjects as *Daphne Cneorum majus*, *Phlox setacea atropurpurea*, *Cheiranthus alpinus*, *Phlox Vivid*, *Incarvillea Delavayi*, and *Heuchera sanguinea* were all well displayed.

Messrs. Barr & Sons, King Street, Covent Garden, occupied an immense space with their various exhibits. Entering the tent the alpine and rock plants arrested one's attention first, for not only were the subjects good, but they were most tastefully displayed, and the tiny labels used did not detract from the general effect. A few of the most notable subjects were *Nepeta hederacea variegata*, *Cheiranthus mutabilis*, *Gentiana verna*, *Trifolium repens pentaphyllum*, *Cypripedium pubescens*, *Delphinium nudicaule*, *Meconopsis Cambrica*, and *Aubrietia Dr. Miles*, with a few pans of charming *Primula Sieboldi* in variety. In the section for hardy flowers it was difficult to enumerate all worthy of note, but the early flowering *Gladioli Peach Blossom*, *Insignis*, *Blushing Bride*, and *Rosy Morn* were attractive, as were the Spanish Irises in variety. The *Aquilegia* hybrids were an excellent strain, large bunches of *Dicentra spectabilis*, *Scilla patula major*, single *Paeonies*, Irises of the Germanica type, and *Ixias* were extremely good. Now we come to their pigmy trees, which appeared in capital health, the bright *Acer sanguineum* being especially attractive, but may we be spared from such contortions and monstrosities. Large

collections of Tulips arranged in their sections completed this remarkable display. The Parrot and Darwin Tulips were all large and -tagged in great variety. The collection of English or florist's varieties included some excellent bunches in the breeders; Lord Derby, Mabel, Ashmole's, Lady C. Grosvenor, and Annie McGregor (unbroken) were attractive, while good examples of rectified flowers were seen in Lord Stanley, Lord Denman, Dr. Hardy, Annie McGregor, and Aglaia, while others were an extensive display, and included Striped Beauty, Gala Beauty, Blushing Bride, Viridiflora, and Macrospila.

Rock and alpine plants were largely exhibited by the Hardy Plant Nursery, Guildford; needless to say the arrangement here was excellent, the plants being well grown and attractively displayed. *Trillium grandiflorum*, *Daphne Fioniana*, *Ramondia pyrenaica*, *Heuchera sanguinea*, *Gentiana verna*, *Sempervivums* in great variety, and *Antirrhinum asarina*, were all noteworthy, and to the lover of this section of plants the exhibit must have been a great source of interest. Mr. S. Bride, Alma Nurseries, Farnham, sent a semicircular group of *Calla Pride of the Congo*, a pale primrose form with spotted foliage.

From Messrs. J. Cheal & Sons, Lowfield Nurseries, Crawley, came a large exhibit in three sections—Cacti and allied plants, a rockwork furnished with suitable plants, and, lastly, hardy shrubs, plants, and Violas. The rock plants were well arranged, and looked most natural. Conspicuous were long branches of *Pyrus Malus Scheideckeri*, *Exochorda grandiflora*, and *Coronilla Emurus*. The Violas were fresh and in good variety, many of the best varieties being represented.

A new double white *Petunia Queen Charlotte* was staged by Mr. P. Erselius, Church Lane Nursery, Romford. It is certainly a good variety, and one that will be suitable for market growing, for it is dwarf and of large size. Mr. G. H. Addy, The Priory, Waddon, staged a few Alpine Auriculas, which were bright and of good substance. Mr. W. Edwards, gardener to C. E. Heath, Esq., Holmwood, Surrey, made an interesting exhibit with *Rhododendron Falconeri* with a box of fine heads. Mr. W. J. Caparne, Rohais, Guernsey, arranged a table of Irises, not unlike small German varieties. The blooms had not travelled very well, and it would be difficult to speak of their merits or otherwise at present.

Naturally Messrs. T. S. Ware, Ltd., Feltham, made a good show of hardy flowers, alpine plants, and Mountain Paeonies. The Tulips must be described as a special feature. The pans of *Cypripedium calceolus* and *pubescens* were a source of great attraction. A good collection of *Primula Sieboldi* in good form was also noteworthy. Good plants of *Ornithogalum arabicum* were particularly good, and some *Eremuri* in variety were a feature.

Messrs. Dobbie & Co., Rothesay, had good displays of Sweet Peas and Violas, in the former case large bunches were displayed with their



TREE PEAONIA JEAN DE RESZKE.
(Exhibited by Messrs. Kelway & Son)

own foliage; a few of the best were *Prima Donna*, *Prince of Wales*, *Boreatton*, *Salopian*, *Gorgeous*, *Grey Friar*, *Aurora*, and *Lady Mary Currie*. Show Pansies were represented by two boxes, and it must

have been interesting to the old florists to see their old friends down South again. The Fancy Pansies included some of the most popular kinds; a few of the most noteworthy were Lord Roberts, Col. Buchanan, Colin Pye, John Myers, W. H. Clark, and Mrs. R. Stewart. The Viola, were all growing in pots, and were clean and fresh, but the plant does not lend itself readily to this system of culture; the best were Pembroke, Mrs. R. K. Mitchell, J. B. Riding, Ophelia, Lady Margaret, Goldfinch, Primrose Dame, and Larks.

Messrs. Jones & Sons, Shrewsbury, made a pretty show with their Sweet Peas, hacked with large bunches of Irises, both Spanish and English. The Sweet Peas are delicately arranged in glasses, and small Maidenhair Ferns were employed to relieve the tablecloth. A few of the most noteworthy were Royal Rohe, Salopian, Aurora, Gorgeous, Mrs. J. Chamberlain, Lady Mary Currie, Emily Eckford, and Lovely.

A large and interesting exhibit was that which came from Messrs. R. Wallace & Co., Colchester, which included a long bank composed of Lilliums, Tulips, Irises, Moutan Pæonies, and a few choice hardy plants. The Tulips included good collections of Darwins and Parrots, while two varieties of Pæonies were especially attractive, Mandarin and White Lady, the former a bright glowing red. The Lilliums were a grand feature, *L. Thunbergianum alutaceum*, *L. T. semipleno*, *L. T. Van Houtte*, *L. umbellatum erectum*, *L. candidum*, *L. Hansoni*, *L. longiflorum giganteum*, *L. Martagon alium*, and *L. Dalhansoni* were noteworthy amongst the rest. The Calochorti were staged in several varieties, and the Cypripediums, such as *C. acaule*, *C. calceolus*, *C. parviflorum*, *C. pubescens*, and *C. occidentale* were good.

Messrs. A. W. Young & Co., The Nurseries, Stevenage, Herts, had a miscellaneous collection of Pansies, Cacti, hardy plants, which were very interesting and of general good quality. Messrs. W. H. Roger and Son, Southampton, had a splendid collection of hardy flowering sprays, comprising *Azalea mollis*, *Rhododendrons*, *Genistas*, *Kerrias*, *Syringas*, *Deutzias*, and others. Messrs. V. N. Gauntlett & Co., Redruth, had *Rhododendrons* in great variety, comprising the Himalayan varieties, and the pretty *Embothrium coccineum*.

Messrs. R. Smith & Co., Worcester: the exhibit of this firm was exceptionally rich in a grand variety of well-grown hardy herbaceous plants, comprising Pæonies, Iris, Lupinus, *Centaurea*, *Lathyrus*, Oriental Poppies, *Aquilegias*. The exhibit was tastefully arranged. Mr. W. Baylor Hartland, Ardcairn Bulb Ground, Blackrock, Cork, had single Tulips in splendid variety. The rich colours and splendid markings produced a unique display of brilliant hues.

The displays of hardy plants made by Mr. M. Pritchard, Christchurch, Hants, are well known, and on this occasion he fully maintained his reputation. His extensive exhibit was interesting throughout, the Irises, such as *I. Florentina*, *Hungarica*, *Princess of Wales*, and *Violacea*, were attractive and bright; the various Tulips lent masses of colour gorgeous in the extreme; *Primula japonica*, too, was exceedingly well done; *Pyrethrums*, both single and double forms, were in good variety, while the alpine and rock plants were well arranged on the front. Taking the exhibit throughout it cannot be described as other than good in every way.

Pansies and Violas from Mr. Wm. Sydenham, Tamworth, formed an attractive feature, and the blooms displayed (perhaps not to the best advantage, for they were either on white boards or had white collars) were all large and well grown. Many of the newer kinds were represented, and chief amongst the Violas were Nelly Riding, a grand golden yellow; Sunshine, a good rayless variety of the same colour; Sandpiper, Leda, Seagull, Sunshine, Hawk, Mrs. W. Sydenham, Mary Hare, Jalland's Blue, Isolde, Mrs. Moreton, Masterpiece, and Mary Hare. The Pansies were a good collection, and included good blooms of Neil McKay, Mrs. Tomlinson, Mavourneen, Col. Plummer, Mrs. Jackson, Lady Lock, and S. R. Llewellyn.

Mr. Amos Perry, Hardy Plant Farm, Winchmore Hill, staged an exhibit 40 feet long, comprising Tulips, Irises, and a large variety of hardy flowers. The Tulips, especially in the Parrot and Darwin sections, were bright and attractive. A single Pæonia Edna Mercier, pure white, proved striking. The Geum Heldreichi here was particularly good, as were also plants of *Thalictrum orientale*, *Eremurus* in variety, *Dodecatheon Jeffreyana*, and *Alyssum Sulphur Queen*. The exhibit was formed and arranged with care.

Messrs. W. Paul & Son, Waltham Cross, left the orthodox road here, and we next had the gratification of having a distinct change in the form of an exhibit of Lilacs. It was impossible to note all, but Leon Simon, Scipion Cochet, Emile Lemoine, Souvenir de Louis Späth, and Madame Lemoine were amongst the most distinct and pleasing exhibits. A beautiful exhibit of *Schizanthus Wisetonensis*, grown in pots by Messrs. Hugh Low & Co., Bush Hill Park, attracted much attention from the visitors. The plants were the picture of health, and as they were staged here made splendid decorative plants.

Lily of the Valley came from Mr. J. Jannock, Dersingham, in splendid form, three large cones being formed with the flowers and their foliage which were grown in this position, while the groundwork was likewise filled with the plants in pots. Needless to say both plants and leaves left little to be desired, and Mr. Jannock fully maintained his reputation as a grower.

Mr. J. Upton, Irlam, staged a large miscellaneous group, consisting of some good Coleuses, *Gloxinias*, *Pteris cristata* Uptoni, somewhat like Wimsetti; the whole arranged well with small Ferns, *Caladium argyrites*, and *Marantae*.

Messrs. Paul & Son, Cheshunt, had a display of double and single Lilacs, in which Madame Kreuter, Marie Legrange, Souvenir de L. Spath, and Madame Cassimir Perier, also good examples of *Rhododendrons* Mrs. Chas. Butler, Lady Thistleton Dyer, Helen Paul, and Profusion; a vase of *Cydonia Manlei*, various Irises, a collection of alpine and rock plants, and some choice Tulips, completed the display.

Messrs. J. Kelway & Sons, Langport, exhibited Moutan Pæonies in great variety, both in pots and as cut flowers. A few of the most striking were Beatrice Kelway, Countess Cadogan, Jean de Reszke, a beautiful white form with good petals; Christie Kelway, Brightness, General Hector Macdonald, an enormous flower; Sir Geo. White, deep crimson; Miss Beatrix Jones, and Diamond Jubilee.

Messrs. J. Laing & Sons, Forest Hill, made an extensive exhibit in three distinct sections, the first being a splendid collection of *Streptocarpus*, the flowers being large and varied in colour. The Begonias, both single and double, made a brave show, but were hardly open enough, while the *Gloxinias* were, as usual, an excellent strain, both the selfs and spotted forms being well represented.

A fine exhibit of *Lilium longiflorum* came from Mr. K. Drost, Kew Nursery, Richmond, the individual flowers being large and well developed, while each plant was carrying from four to twelve bloom each. Mr. Aubrey Watts, 30, Mark Lane, staged a group of pot Roses, which were well grown and full of flower. Messrs. Geo. Stark & Son, Great Ryburgh, exhibited plants and cut flowers of a new Viola called Royal Sovereign. A good yellow, after the style of A. J. Rowberry, but said to be of better habit. Mr. L. J. Ching, Crescent Nurseries, Enfield, made a good display of Ferns well arranged; the collection embraced many well known kinds and all were well grown.

Mr. Chapman, gardener to Captain Holford, Westonbirt, Tetbury, arranged an attractive exhibit of *Hippeastrums*, tastefully arranged with Palms and Ferns. Needless to say the group was of the same high-class character as those recently seen in London from the same source.

The Ferns of Messrs. J. Hill & Son, Barrowfield Nurseries, Lower Edmonton, were simply charming, and the arrangement good in every way, some of the *Adiantums* being especially good, while the small Ferns so freely used were graceful to a degree, and greatly enhanced the value of the exhibit from a decorative point of view.

A gorgeous display of *Azalea mollis* and *A. sinensis* varieties, represented by magnificent plants, was exhibited by Messrs. R. & G. Cuthbert, Southgate Nurseries, Middlesex. The colours of the plants defied description. Here was that exquisitely rich variety Alphonse Levallee, orange red, a glowing colour; Sebastopol, ruddy brick red orange; Anthony Koster, glowing deep golden yellow, exceedingly handsome; Belle Vermielle, orange pink; and Elizabeth, rosy blush red. The hardy *Azalea occidentalis*, pure white, was shown in grand form, as was *A. pontica rustica* fl.-pl. Ariadne. This latter is a very sweet and beautiful variety, with strong semi-double tubular flowers. The Ghent *Azalea Pallas*, orange above and russet red beneath, together with the Pucelle, of a mauve hue, formed a representative group, to describe which words almost fail us.

Fruit and Vegetables.

Messrs. Rivers & Son, of Sawbridgeworth, exhibited a fine collection of healthy, well balanced fruit trees in pots. Our illustration of the Cardinal Nectarine scarcely does justice to the subject, but will serve to show the form and habit of these pot subjects. The tree in question carried thirty large fruits, though only a few are seen in the illustration. All the best known varieties were represented, and they were simply loaded with fruits of the highest quality, colour, and finish. Duke of York Peach is a grand variety, also the new Peach, Duchess of York, represented by both tall and dwarf trees. Prince Edward is an excellent variety. Cardinal Nectarine stands out a variety of exceptional merit, many excellent trees of this variety bearing splendid crops. The fruit is also exhibited in pans on wood shavings, and presents a fine and meritorious appearance, the fruits being richly coloured. May Duke Cherries also in pots are well laden with fruit fully ripe and luscious in appearance.

Messrs. Geo. Bunyard & Co., Maidstone, exhibited a splendid collection of fruit, comprising beautifully coloured varieties. Some of the most handsome were Bismarck, Nancy Jackson, Cornish Aromatic, Lane's Prince Albert, Calville Rouge, Vicar of Beighton, Annie Elizabeth, Emperor Alexander, Belle Pontoise, Newington Wonder, Beauty of Kent, Tibbet's Pearmain, Striped Beefing, Wagener, Hoary Morning, Bramley's Seedling, Melon Apple, and numerous others, all in superb condition. This splendid collection of fruit was standing evidence as to the splendid method of keeping Apples to this season which Messrs. Bunyard adopt. Included in this display was a fine dish of Louis Gauthier Strawberry grown under gentle forcing. The fruits are large but not perfectly ripe, though they have a rich colour and soon would be. This variety is also an abundant bearer. The exhibit was flanked at the rear with foliage plants, and the dishes interspersed with small Ferns, giving a most fresh and inviting appearance.

Lord Wantage, V.C., K.C.B., Lockinge Gardens, Wantage (gardener, W. Fyfe), has a superb collection of magnificent fruit. It includes Black Hamburg and Foster's Seedling, Madresfield Court and Buckland Sweetwater Grapes, Hero of Lockinge and British Queen

Melons, May Duke and Frogmore Early Bigarreau Cherries, Lord Napier Nectarines, Stirling Castle Peaches, Royal Sovereign Strawberries (large and splendidly coloured fruit), Brown Turkey and White Marseilles Figs, Oranges, Citrus medica, Monstera deliciosa, Sutton's Dessert Golden Cluster, Dwarf Champion, Dwarf Gem, and Red Currant Tomatoes. Apples were represented by Wellington and Fearn's Pippin. The whole collection was of exceedingly good quality, handsomely coloured and finished. The Grapes were excellent medium sized bunches, well finished. Mr. Fyfe was congratulated on the collection, which was prettily decorated with the small Currant Tomatoes and sprays of Asparagus Sprengeri.

A comparatively small but good collection of fruit came from Sir Jas. Pease, Hutton Hall, Guishorough, Yorks. It comprised well coloured Black Hamburg and Early Saumur Frontignan Grapes, splendid Early Rivers and Black Tartarian Cherries, Royal Sovereign Strawberries, Royal George and Dr. Hogg Peaches, Early Rivers Nectarines, Yorkshire Beauty, Champion Monarch, Magnum Bonum Melons, The Czar, Early Transparent Gage, Purple Imperial Plums, American Monster, King of Tompkin's County and McIndoe's Russet Apples, Brown Turkey Figs and Citrons. Mr. McIndoe, the gardener, is to be complimented on his exhibit, which was tastefully arranged on fresh green leaves in the dishes.

Mr. J. Watkins, Pomona Farm Nurseries, Withington, Hereford, had a very large collection of Apples splendidly arranged. The largest baskets comprised Hambleton Deux Ans, Dumelow's Seedling, Belle de Pontoise, Striped Beefing, Cox's Orange Pippin, and Farmer's Seedling. All these were highly coloured, fresh, firm fruit. Over a hundred other dishes of the best varieties of Apples were also exhibited, all in splendid condition and highly coloured.

Messrs. Laxtons Bros., Strawberry specialists, Bedford, exhibited Strawberries in pots, containing extremely large sized fruit, "The Laxton." It is a big cropper, and the fruit colours well. Laxtons' Trafalgar (new) is a good flavoured variety, producing large fruits. They also had pots of unnamed seedlings of great promise. Dishes of ripe fruits comprised Laxtons' New Mentmore, a rich, deeply coloured variety, Royal Sovereign, very large fruits, The Laxton, and Trafalgar.

Examples of the new Pea Edwin Beckett were staged by the Messrs. Cutbush & Sons. This is a very fine general and exhibition variety.

The new early Pea King Edward VII. was exhibited from Swanley; also Pea English Wonder and Pea Daisy, all laden with pods.

Choice stocks of Tomatoes, Cucumbers, Peas, and Potatoes came from Messrs. Sutton's. They were all shown growing, the Peas, Tomatoes, and Cucumbers being trained on iron frames of various designs. Cucumbers Sutton's Matchless and Sutton's Lord Roberts were on view, and these two adequately represent the latest achievements in the improvement of the Cucumber. There were over thirty pots of Tomatoes, including the choicest and most select varieties. The handsome golden yellow Tomato, Sutton's Dwarf Gem, was exceptionally good. Many sorts were displayed in racemes of red and yellow, and looked charming. Potatoes were shown growing in ornamental boxes. One side of each box has been removed and glass substituted, enabling the visitor to see the tubers growing in the earth at the root of the plant. Specimens of dug tubers are on trays just below the boxes. The varieties exhibited in this interesting manner are the best of the early sorts—viz., Sutton's Ashleaf, Sutton's Ringleader, Sutton's Harbinger, Sutton's Al, Sutton's May Queen, and Sutton's Ninety-fold.

From Messrs. Carter come Early Morn Peas, with enormous pods. Duke of York Tomato is also shown, as are most luscious and tempting Melons, deliciously fragrant. The perfection of the fruit and vegetables is the result of continuous work during the last forty years.

Lord Aldenham (gardener, Mr. E. Beckett), had a most magnificent collection of splendidly grown vegetables comprising Lettuce, Beet, Polegate Tomatoes, White Emperor Onions, Windsor Castle Potatoes, Edwin Beckett Peas, a dish of unique pods; Dessert Tomato, Early

Milan Turnip, Wood's Centenary French Bean, Conover's Colossal Asparagus, Seakale May Queen, Broccoli Early Gem, Carrot Flower of Spring, Pen-y-byd Vegetable Marrow, also Scarlet Perfection Carrot, Royal Albert Rhubarb, Leeks Holhorn Model, basket of Mustard and Cress, Radishes, Cucumbers, Onions, Mushrooms. The collection was in exquisite condition, the whole lot being grown and set up in the well-known style usually exercised by Mr. Beckett.

The Horticultural College, Swanley, had a most interesting collection of vegetables containing Peas in pots, good Cabbage, Broccoli, Beans, Peas in pod, Carrots, Cucumbers, Potatoes, Asparagus, Lettuce, herbs. The majority were well grown and in fine condition, reflecting great credit on the College.

A. Henderson, Esq., M.P., Buscot Park, Faringdon, Berks (gardener, W. L. Bastin), had a creditable collection, including Peas in pots, excellent First Crop Cauliflowers, Cucumbers, yellow and red Tomatoes, Potatoes, Radishes, Carrots. The exhibits also included Apples, Royal Sovereign Strawberries, Brown Turkey Figs, Little Marvel Peas in pots, Fillbasket Strawberries, and Late Queen Broccoli.

Mr. W. Godfrey, Colchester, exhibited immense bunches of Asparagus. Mr. James Udale, Droitwich, had a nicely arranged exhibit of Conover's Colossal Asparagus, which were of giant size and tender in condition.

Mr. S. Mortimer, Rowledge, Farnham, Surrey, had boxes of Cucumbers named Famous, a cross between Daniels' Duke of Edinburgh and Telegraph. They were splendid straight fruits over 20 inches long. Mr. J. J. Upton, Irlam, Manchester, also a box of Cucumbers, long straight fruits of more than ordinary size named Freedom, and a box of Up-to-Date, fair sized fruits of excellent colour. Mr. E. A. Coryn Walden, Hornchurch, Essex, had two plants of variegated Cucumbers named King Arthur, white and green leaves. The fruit is said to be white and green blended.

Certificates and Awards of Merit.

Odontoglossum Adrianae Lindenianum (J. Leeman).—A very handsomely spotted flower (award of merit).

Odontoglossum crispum Captain Hocken (H. Claes).—A very brightly tinted variety of the spotted type; the flowers white with a very deep red brown spotting; when this gains strength it will be very fine indeed. The habit closely resembles that of *O. pescatorei*.

Odontoglossum Wilckeanum Golden Queen (Thompson).—A grand plant of this was shown, beautifully grown, and with a spike containing twenty large flowers. These must be upwards

of 5 inches across, creamy white in ground colour, with large irregular spots of brown on the sepals, and smaller roundish ones on the petals. This was awarded a first-class certificate and a cultural commendation, and was shown by W. Thompson, Esq., of Walton Grange, Staffs.

Odontoglossum crispum Annie (H. T. Pitt, Esq.).—This is a pretty variety of the spotted type, the sepals and petals being white suffused with red, and plentifully spotted with reddish brown (first-class certificate).

Odontoglossum crispum Abner Hassall (Stanley Ashton & Co.).—This is a lovely gem, and when it gains strength it will rank as one of the very finest coloured varieties of *crispum*. The spotting is very regular, deep reddish brown on a white ground, the sepals lightly serrated (award of merit).

Cattleya Mendeli Mrs. Robert Tunstall (Hugh Low & Co.).—A pretty variety of very delicate habit, producing two flowers almost pure white, with a rosy blotch in front and a yellow throat (award of merit).

Cattleya Mendeli gigantea (H. Little).—The plant shown was of very vigorous habit, and carrying two immense flowers; the very broad sepals and petals are white, very faintly suffused with rose; the lip is large and well displayed, round in front, prettily frilled, blotched with light rosy purple in front, and yellow in the throat (award of merit).

Laelio-Cattleya Edgar Wigan (Sir F. Wigan).—This is a truly superb hybrid, a cross between *Laelio-Cattleya Aphrodite* and *L. Digbyana*. The plant is a strong one, and bearing two fine flowers. Like nearly all



STRAWBERRIES IN BARRELS.

the hybrids from *Lælia Digbyana* it has an exquisitely fringed lip, and the pencilling in the throat is superb, with a deeper line through the centre. This lovely flower seems but a point from absolute perfection—it needs a broader petal (first class certificate).

Lælio-Cattleya Ivernio (Charlesworth & Co.).—This is a cross between *L. C. callistoglossa* and *Lælia tenebrosa*. In habit like the last-named parent, the front of the lip being beautifully tinted with rose purple. The sepals and petals are rose with a green suffusion at the base (award of merit).

Androsace Chumbiense (Veitch & Son, Exeter).—Much showier than the commoner species of *Androsace*, with stalks 4 inches in length, terminated with bright mauve cymes. The plant is a decidedly attractive little alpine (award of merit).

Begonia Queen Alexandra (Messrs. T. S. Ware, Ltd.).—A double variety with strong, well-formed flowers, rosy body colour and brilliant crimson Picotee edge (award of merit).

Begonia Mrs. W. G. Valentine (Messrs. T. S. Ware, Ltd.).—Another double variety with exquisitely soft cream coloured flowers, large, full, delightfully sinuous (award of merit).

Begonia Mr. Henry Clark (Messrs. Ware, Ltd.).—A double flower of a living scarlet colour, most magnificent, and of fine, full rounded form (award of merit).

Darwin Tulip Van Poortvliet (Barr & Son).—Has fine broad rounded petals, forming a deep wide cup, of a bright rose-carmine hue, with a blue base and black anthers (award of merit).

English Tulip Dr. Hardy (Barr and Sons).—This is a rectified variety with bright yellow base and dark red beams which also flake the petals (award of merit).

English Tulip Annie McGregor (Barr & Sons).—A brighter rosy-carmine colour than *T. Van Poortvliet*, and has a pure white base. A smart and beautiful Tulip (award of merit).

Hybrid Rose Soleil d'Or (W. Paul).—Colour deep rich golden yellow, very good form (award of merit).

Hippeastrum Loris (Capt. Holford).—A large creamy white variety, heavily veined with red, good form (award of merit).

Lithospermum canescens (Amos Perry).—Dwarf, and of a bright golden yellow colour, flowers open and tubular, in terminal cymes, foliage hairy, very fine (award of merit).

Leucocrium montanum (Amos Perry).—A North American plant with long, tubular, white flowers, which spring from linear glaucous foliage. Quite a gem for the hardy garden (award of merit).

Pæonia Christine Kelway (Kelway & Son).—A grand semi-double white, very large and full (award of merit).

Rosa polyantha Leuchstern (W. Paul).—A brightly coloured Rose, white centre, pink edge, very pleasing (award of merit).

Swainsonia McCullochi (H. Low & Co.).—The raceme is strong and erect, bearing few but large sized flowers of a deep reddish brown colour, the standard well turned back; quite distinct (award of merit).

Tree Carnation Sir Hector MacDonald (Cutbush & Son).—A variety with very superior flowers; large, well formed, broad, smooth petals; white ground, striped towards the edge with carmine; the centre is full, and the calyx firm (award of merit).

Tulipa Gesneriana Ixioides (B. Hartland, Cork).—A typical bloom of the *Gesneriana* form, large, soft canary yellow with dark blue-black base (award of merit).

Tulipa Mooreana (Wallace & Co.).—A bright carmine coloured Tulip, beautiful, oval-formed flowers, the segments tapering to an acute point, and yellow base (award of merit).

Tulipa Batalini Sunrise (Hogg and Robertson).—A dwarf orange-red Tulip which is very attractive (award of merit).

Tulipa Gesneriana Ixiodes.—This also came from Hogg and Robertson (award of merit).

Tulip La Tulip noire (Hogg & Robertson).—A black, satiny Darwin Tulip, very handsome. A darker one could not be got (award of merit).

Cucumber Famous (S. Mortimer).—This is the result of a cross between *Daniel's Duke of Edinburgh* and *Telegraph*. It seems to be a heavy cropper, and the fruits are very long, even and smooth (award of merit).

Peach Duchess of York (Rivers & Son).—A bushy variety with a very certain habit of setting. This is a great quality with varieties for forcing, as hitherto the American sorts have had to be relied on. The fruit is pale, but as a market variety we hear it sells well (award of merit).

Medals and Cups Awarded.

Gold medal to Lord Aldenham, for vegetables; F. Sander, for Orchids; Messrs. J. Veitch, for general exhibit; T. S. Ware, for general exhibit; Fisher Son & Sibray, for general exhibit; W. Paul & Son, for Roses; Guildford Hardy Plant Co., for alpine.

Hogg medal to Thos. Rivers & Son, for fruit trees.

Sherwood cup to Sir F. Wigan, Bart., for Orchids.

Silver Cup to Jas. Cypher, for Orchids; H. Low & Co., for Orchids; Leo. Rothschild, for Vanda Teres; Barr & Sons, for general exhibit; G. Mount, for Roses; J. Watkins, for Apples; Geo. Bunyard, for Apples; Sir Jos. Pease, Bart., for fruit; Lord Wantage, V.C., for fruit; J. Carter & Co., for general exhibit; H. Cannell, for general exhibit; W. Cutbush & Son, for general exhibit; Lord Rothschild, for Moss Roses; Capt. Holford, C.I.E., for Hippeastrums; Messrs. Cuthbert, for Azaleas; R. I. Measures, for insectivorous plants; Paul & Son, for Roses, &c.; R. Smith & Co., for Clematis, &c.; C. Turner, for Roses, &c.

Silver-gilt Flora Medal to Stanley Ashton & Co., for Orchids; J. Cheal & Sons, for hardy shrubs and herbaceous flowers; Laing and Sons, for Begonias, Gloxinias, and Streptocarpus; Jackman & Son, for Clematis and hardy flowers; Cripps & Son, for Japanese Maples; J. Hill & Son, for Ferns; J. Peed and Son, for Caladinms, Begonias, &c.; R. Wallace & Co., for hardy flowers; John Waterer & Son, for Rhododendrons, &c.

Silver - gilt Knightian Medal to Alex. Henderson, Esq., M.P., for fruit and vegetables.

The first day of the show was as delightful as could be wished for; and a great and stylish concourse turned out. We wish to add a word in praise of the smooth arrangements made by Rev. W. Wilks and Mr. S. T. Wright, who were ably assisted by Messrs. Humphries, Reader, and the office staff. We experienced nothing but courtesy, and were much aided in producing our hurried report.

Societies.

Brighton Horticultural.

A monthly meeting of the Brighton and Sussex Horticultural Society and Mutual Improvement Association was held at the Imperial Hotel, Brighton, on May 17th. The competition for the occasion was for Pelargoniums,

Mignonette, and Spiræas, and some choice specimens of these flowers were shown. The prize list was as follows:—Class 1, two Pelargoniums: first, F. Fairs; second, — Tanner; third, G. Miles. Class 2, two Mignonette: first, F. Fairs; second, G. Peckham. Class 3, two Spiræas: first, G. F. Bunney; second, A. King; third, A. T. Braden. The secretary (Mr. G. Thorpe) gave some particulars with respect to the recent spring show of the Society. The receipts for the show, he said, were £132 5s. 11d., these being £2 0s. 8d. in excess of last year. The expenditure was £190 13s. 9d., which left a loss on the show of £58 7s. 10d. Last year, however, the loss on the show was £67 9s. 9d., so that this year they had been a little more successful.

Birmingham Amateur Gardeners' Association.

Mr. Rowland H. Barry presided at a meeting of this Association held at the Technical School last evening, at which Mr. C. H. Herbert, Sparkhill, gave a very interesting lecture on "The Various Modes of the Propagation of Plants." He said there were numerous ways of propagating, either by seeds, cuttings, leaves, stems, layers, bulbs, tubers, division of rootstock, or by grafting. He exhibited specimens of propagating by most of these methods, and described the manner in which it was done. At the conclusion of the lecture a hearty vote of thanks was tendered to Mr. Herbert for his lecture, and to Mr. Parry for presiding.



RIVERS' CARDINAL NECTARINE.

(Exhibited by Messrs. Rivers & Son.)

Impressions of Wilton.

WILTON HOUSE and its gardens are famous both in ancestral and modern history, the former as being the home of the past and present Earls of Pembroke, noblemen who have attained to the greatest distinction by their lofty associations with the great pageantry of ancient and modern decades—Royal, Parliamentary, and otherwise; the gardens are well known because of their long connection with Mr. T. Challis, a gardener possessed of great scientific and practical knowledge, and who is conversant with every aspect of garden craft. For a period of something like forty years Mr. Challis has had charge of this princely domain, and I am sure the hope and assurance of his many friends is bound up in the happy prospect of the attainment of his Jubilee at Wilton. A record of forty years' service is something certainly a man may be justly proud of, and those who know Mr. Challis intimately will bear me out in saying that in his personality there is great embodiment of vigour, clear perception, activity of mind and body, and unflagging energy.

These are attributes pertaining to the younger man, but personally I do not know of any in which they are more highly developed than in this highly respected veteran of the gardening world. When it is remembered that over 70 acres of grounds, beside extensive fruit, vegetable, and glass departments demand his personal directorship, it is seen at once that an activity of mind and body is a necessitous quality, and all are so excellently supervised that it is almost invidious to particularise. Were I asked to summarise Mr. Challis's pet theme I should certainly think it must be fruit culture, for here it receives a most generous recognition, particularly hardy fruits. All and every kind amenable to an English garden is extensively planted, and the very best of every fruit has a place. Cordon training has an extensive use among Pears, Peaches, and Nectarines; these would appear to be planted literally by the hundred, their growth everywhere being excellent, and the fruit prospect, judged by the wealth of flower and, is most assuring. March is not a month one could choose as the best to pass in review such vast gardens, but the opportunity for such a visit is not always permitted at an opportune date.

Glass coping is extensively adopted. Peaches, Nectarines, Pears, and Plums all are so sheltered, and what I have not previously seen in this connection is that the coping is a fixture, and remains so always. Guttering and relief pipes are fixed so that the water is carried down at intervals into the soil—a drain would scarcely be necessary, because of the gravel under stratum and the shallow depth of soil. The guttering prevents all drip, and the work of pruning and nailing can be carried on if need be without inconvenience in wet weather. All the coped walls are fitted with the "Challis trellis," an arrangement of light sawn timbers peculiarly adapted to the growth of cordon trees trained thereto, and is also a supporting medium for nets attached for protection against spring frost or mischievously inclined birds in autumn. This arrangement provides for a decidedly useful augment to the fruit store, and of Pears in particular, without any detriment to the wall trees. The protection of glass and nets greatly assist the late autumn fruit in ripening and long keeping, a fact emphasised in the notes on "Late Dessert Fruits," given by Mr. Challis during the past winter. The amount of fruit gathered annually must be enormous, and though of somewhat low elevation, and a frost-inviting river at the lower extremity of the garden, there has never been a season without fruit. One great feature of Wilton Gardens is the excellent water supply—this the outcome of Mr. Challis's dogged perseverance and adaptability of material. The river gives the means of supply and the motive power. The water wheel and triple pumps in use now, have for thirty years or more furnished the daily needs of the garden. The most extraordinary association of this water scheme is that both wheel and pumps were thrown aside as useless from another estate department, but under skilful manipulation have done duty for over thirty years, and to all appearance will continue for many years yet to come. Fruit-growing on such shallow soil would be simply wasted effort without

water, but by its aid the best possible results are obtained. There are reservoirs and storing tanks that are kept filled, and can be drawn upon as required, and by an ingenious invention manure water from store tanks can be transmitted through the mains to given points for irrigation or other uses, governable by stop valves. The water system is most complete, and is so much more commendable since it is the outcome of local invention, and carried out under the personal supervision of Mr. Challis himself.

The extent of lawn, as before mentioned, is extensive; some 75 acres are devoted to pleasure purposes, and which naturally include shady walks, a wealth of shrubbery borders, as well as the open green sward. Some very fine trees, deciduous and evergreen, are here, one Cedar in particular having an enormous girth, and an Evergreen Oak with a vast spread of supported branches clearly illustrate an age of centuries. Then there are many trees that have been planted by distinguished visitors, and not a few fine Conifers, raised from seeds on the place, in varying ages and sizes. One of these, planted by the Countess of Pembroke, commemorates the close of the nineteenth century, and will, should no accident befall it, become an interesting relic in future history. Flower gardening, as generally understood, is not so extensively carried out as in some gardens of lesser extent; but with such a wealth of Roses and other flowering shrubs and trees, and herbaceous plants, there is ample colour without extensive formal and undesirable flower gardens. There are, of course, flower gardens, the designs of which are in keeping with the historic associations of the domain. Water scenes enter prominently in the landscape, two rivers and their tributaries passing through the grounds, adding charms that are beyond value. A wide range of park land comes into

view from the main lawn, rising away in the distance to higher altitudes, which relieves the flatness of the lawns themselves, and which seem to become absorbed in the undulating nature of the ground beyond.

Everywhere the land is heavily timbered, and the house itself seems to nestle in this delightful tree-land with beautiful seclusion and repose. The glass department, like the grounds, afford a striking illustration of the



PART OF MESSRS. BUNYARD'S COLLECTION OF APPLES.

past and present state of horticultural requirements. There is a most interesting range of glass which has existed for over a hundred years, and still finds a use, though not in every case of the same kind as the ancestors of Wilton intended. In one section there exists, however, one of the original Peach trees, a standard-trained specimen, and at the time of my visit it was in healthy bloom. It bears its annual crop with great regularity, but its name seemed obscured in the past. It certainly is a relic most unique and valuable. The timbers of this building are indeed massive, and contrast most conspicuously with adjacent structures of more modern design. A magnificent range some 200 feet in length, of proportionate width and lofty stature, was the outcome of Mr. Challis's invention of glazing without putty. When designs and drawings of the principle were submitted to an eminent firm of horticultural builders, they declined to undertake the work; but, undaunted, and supported by his noble employers, Mr. Challis supervised the erection of this range by the estate workmen, and it now stands as a monument, be it said, to his honour and his credit. Since that time the system has been extensively adopted and approved elsewhere.

In some divisions of this noble range is where the cross-trellis system for training Peach trees was first adopted by Mr. Challis, and since imitated by so many gardeners. The houses at Wilton, however, are better fitted for the system than any I have inspected elsewhere, because of their height, width, and the open curvilinear nature of the roof. Magnificent Peaches and Grapes are grown in this range, and so are Strawberries. From the lofty shelves came the memorable berries that were sent to the Emperor Frederick before his lamented death. At the time of construction of this range plans were prepared, and provision in part made for the erection of other ranges contiguous thereto; but, though this has remained in abeyance for so many years, there is yet the hope that time, and at no distant date, will effect the object desired. There are other ranges of fruit, plant, and Orchid houses, the latter having a wide reputation. One condition that struck the casual visitor was the apparent dryness maintained; a remark passed by one of a party being that the Wilton pots never required a

wash or scrub. Certainly there was not a suspicion of green or moss growth on any, and the majority appeared as bright as though fresh from the kiln. No syringing is practised, and atmospheric vapour is governed by the hygrometer. The apparent dryness of the atmosphere was striking in the extreme in all the various structures, yet plants and crops displayed their customary vigour and freedom from insect enemies. To mention only a tithe of what is grown in the varied structures would demand too much space. Suffice it to say that flower and plant, Orchid and fruit culture, show that an intricate study is made of every subject. Roses are very extensively grown, both under glass and the open. Hundreds occupy pots and rafters under glass, and great breadths were seen in the open garden of home-worked plants. Amaryllis is another specialty, and so are Carnations and Violets.

Ventilation is an interesting study at Wilton, Mr. Challis having perfected a system, years ago, of transmitting air into the house through chambered walls. In the lofty range of Vine and Peach houses, referred to previously, the front and back walls are so constructed that air passes in at the highest point, and is admitted just above the ground line inside through sliding shutters, adjusted by lever power. In windy weather this system allows of ventilation without opening the roof-lights, and the same principle, I observed, was adapted to open-air pits as well as the houses. Violets in these pits were splendid, so full of vigour and flower. These are only a few impressions gained during a short afternoon visit made in March, a time quite inadequate to allow an inspection of half of the interesting features, which have been largely created during Mr. Challis's long course of years at Wilton. He is indeed a man of many parts, and an interested visitor could not leave without the gain of useful knowledge, whether he be old or young, learned or unlearned.—W. STRUGNELL.

Water Gardens and Gardening.

WHEN so much attention is being devoted to outdoor gardening, the plea expressed by Mr. Jackson Dawson in a bulletin of the New England Association of Park Superintendents, which was brought to our notice by "American Gardening," should be of interest. Mr. Jackson writes that one of the great needs in our parks and gardens is some natural-like plantations near our ponds or lakes. As a rule there is too much cleaning up and cutting down of the natural shrubbery, leaving nothing to break the shore line. While I would not like the whole pond or shore covered with shrubs or aquatics, I would like some little pieces of nature left. What looks more unnatural than a beautiful pond or lake divested of all natural beauty, leaving the trees all trimmed up like so many sentinels, and every vestige of shrub and flowering plant cleaned to the water's edge? On the other hand, what is more beautiful than the trees or shrubbery hanging over a river's bank or gracefully grouped at intervals along the edge of a pond? We have so many plants that love this moist situation. Imagine a planting of groups of Azaleas, Clethra, Viburnums, Cornus, Myrica, Rhodora, and Black Alder, high bush Blueberries, with Irises, Hibiscus, Lobelia cardinalis, Forget-me-not, Caltha palustris, Eupatorium purpureum, Asclepias purpurascens.

Can we not have more water gardens in our parks, and make those we have more ornamental, instead of the unsightly things edged with stone walls that we call ponds? No pond or brook should be banked with stone unless actually necessary to hold the soil in its place, and even then they should not be laid like a wall, but as near on a natural slope as possible to the water's edge, with plenty of pockets left to plant, so that eventually the stones will not be seen, but would have the appearance of a natural bank. What we need most is some natural bits of planting near our ponds or lakes. As a rule we have too much trimming and cleaning up around them, often destroying the shrubs which were really beautiful, and turning what was beautiful Nature into desolation. I have seen ponds and bays where all the natural shrubbery and native planting was cleared up to the water's edge, and the trees in the park ground trimmed up like so many sentinels, thus destroying all the charm of the once natural woods and river banks. We know, of course, that in public places we cannot have all such places decorated, but we could have more than we do. We surely have material enough to plant such places with perfectly hardy plants, and when once planted I am sure the public will appreciate them.

A lake or pond, properly planted, can be made a thing of beauty from spring to fall, and even into the winter. These places need not all be planted, mossy openings can be left; but when it is planted the planting should be massive, and so planted that a continuance of bloom could be had from spring until the middle of autumn. Trees and shrubs, gracefully grouped with herbaceous plants on edges, and aquatics in the water, present at once a beautiful contrast with water not so decorated. I have seen many fine natural effects which might well be copied; for instance, a group of Flag. *Typha latifolia*, with *Hibiscus palustris* and Cardinal Flower and white Water Lilies on the

surface along the Hudson; a large rock at the edge of a wood with pool in front, *Helenium autumnale*, Ferns, and Cardinal Flower; a ditch in a brackish marsh, *Phragmites communis*, *Hibiscus palustris*, *Lilium superbum*, *Lobelia cardinalis*; a river bank with Buttonbush, *Clethra*, and Alder, with huge masses of *Lythrum Salicaria* and white Water Lilies in the eddies; the *Lythrum* in such quantities that it dazzled the sight. A river with overhanging trees and shrubs, *Clethra* and *Lobelia cardinalis*, *Mimulus ringens*, Arrow Heads, Pickerel Weeds in groups. A swamp of Cardinal Flower, Fire Weed, and *Bidens*, &c.

I could enumerate groups without number, all beautiful, and offering you object lessons so that you might make hundreds of combinations out of chiefly native plants. Add to these many fine herbaceous plants and aquatics that are hardy, and a water garden could be made the finest feature in many of our gardens and parks. The following list, all hardy, and mostly native, are fine for the water garden:—Shrubs: *Azalea viscosa*, *Rhodora canadensis*, *Rosa setigera* and *lucida*, *Ilex verticillata*, *Ilex laevigata*, *Ilex glabra*, *Cornus stolonifera*, *Clethra alnifolia*, high bush Blueberry, *Viburnum dentatum*, *Cephalanthus occidentalis*, *Spiraea salicifolia*, *Clematis virginiana*, and many others. Of herbaceous plants we have *Hibiscus palustris* and others, *Lobelia cardinalis* and *syphilitica*, *Lythrum Salicaria*, *Caltha palustris*, different fall blooming *Asters* and *Solidags*, several hardy *Coreopsis*, *Asclepias purpurascens*, *Eupatorium purpureum* and *perfoliatum*, *Mimulus ringens*, *Chelone glabra* and *Lyonii*, *Subbatia chlorides*, *Iris versicolor* and *Pseudacorus*, and, if wanted, all the forms of the Japanese Iris. Of truly aquatics we have all the *Nymphaeas*, both native and hardy hybrids, *Nelumbium luteum* and *speciosum*, the pretty little Floating Heart; *Limnanthemum*, the Pickerel Weed; *Alisma plantago*, *Calla palustris*, the *Utricularias*, the *Sagittarias*, several species; the *Nuphar advena*, the Water Shield; the Water Poppy, the Flags, *Kalmias*, many of the Rushes and *Ledums*, all come in and can be used to great advantage, and when judiciously combined form a most attractive garden. Besides these there are numbers of varieties of foreign aquatics, both tender and hardy, that can be used to advantage.

Young Gardeners' Domain.

Primula stellata.

DURING the past three or four years this beautiful section of flowering plants has become immensely popular, and deservedly so. For house decoration, either in a cut state or otherwise, they are most valuable in winter and spring. Their elegant and graceful habit, the flowers being thrown well up above the foliage, and delicate shades, make them objects of considerable attraction. Seed may be sown in May, and again in July for succession, in well drained pots or pans, placing a few leaves or a piece of moss over the corks. The compost in which the seeds are sown should consist of two parts leaf soil, one part sifted loam, with enough sharp sand to keep the whole porous. Before the seeds are sown the soil should be made moderately firm and level, then sow thinly and evenly on this, and slightly cover with some very fine sandy soil. The pots should then be watered very carefully with a fine-rosed can, or the seeds will get washed into a heap, the pots being then placed in a warm greenhouse, and covered with a piece of slate, which conserves moisture, and the seeds germinate better in darkness. So soon as the seedlings are large enough to handle they should be pricked off into boxes about 3 inches apart in a compost as before, with a little more fibrous loam added, then water well and shade for a few days.

Water should be given carefully at all stages of growth, or the plants will rot off at the base. The lifting of the plants demands attention, so as not to disturb any more soil than is possible, as the seeds germinate very irregularly. When the plants touch each other they should be transferred into 3½-inch pots, well drained, good drainage being essential to successful culture, and a heavier compost may be employed. Beautiful little specimens can be grown in this sized pot, if it is desirable, from some of the later sown plants. I may mention that some self-sown seedlings that were got up and potted at the latter end of September have been most valuable to us for table decoration; the 3½-inch pots, in which they have flowered, being useful for fitting into small silver receptacles used on the dining table. These small plants have, in some instances, developed eight flower trusses, the central one being 16 inches above the top of the pots. Larger specimens can, of course, be grown from earlier sown seeds, and potted on into 4, 5, or 6-inch pots, as found desirable. As the flowers develop a little weak manure water, or a pinch of "Clay's" occasionally, will be most beneficial. We have grown the plants on, and flowered them a second year, but think there is little to be gained by it.—W. HITCHMAN, *Moor Hall*.

Australian Apples.—Parts of Australia are becoming lively rivals to Canada and the United States in the European Apple trade. Tasmania especially has been found a first-class Apple-raising country. There are 8373 acres in Apple orchards there, and the product in 1899 was 363,915 bushels.

Common Mistakes in Fruit Culture.*

(Concluded from page 410.)

Purchase of Trees.

I MUST say a few words as to this. Hundreds of large buyers have lamented that they first started with trees purchased at auctions, which may or may not be true to name; are often "dragged up" by inexperienced men, and planted by the same class of labourers. I cannot too strongly advise all buyers to place their orders with any thoroughly respectable firm who grow what they sell; to be ready to give a fair price for their trees; and when they do not themselves know the best varieties for their soil and locality, to place themselves in the hands of the dealers. There are numbers of first-class fruit nurseries up and down the country, and it matters little where they are bought, provided the trees are clean, healthy, and well ripened. Change of soil is an exploded myth, because, if the trees are sound and well rooted, they are bound to succeed. Many folks decide on the varieties they will purchase from specimen fruits which they see at exhibitions and on the market boards. In the former case much may have been grown under quite exceptional circumstances, and in the latter case sellers often label fruit with a popular, but altogether erroneous name. Although this paper is mainly intended for amateurs, I cannot omit to remark that one of the most serious mistakes on the part of market growers in the past has been the planting of too many varieties, and thus a steady sale of any one variety which meets with approval cannot be kept up. For market purposes at least fifty trees of a variety should be planted, and 300 is better.

Insects and Blights.

The errors here are mostly those of admission, and the old adage, "Prevention is better than cure," is very apt in this connection. The best plan is to attack insect's on their first appearance, and before they have got a hold or had time to increase and multiply. A timely attention to an aphid-infested twig will often check the evil at its first source, and prevent its spreading to other subjects. A curled leaf, or a twig where the leaves cluster together at the end, bespeaks the pest's presence, and the same spot should be inspected every alternate day, and the tree be carefully washed until the aphid has been entirely got rid of. American blight is another case in point; it wants attention at once, or the insects fly on the wind and establish themselves all over the place. Another important point is always to have the rubbish heap outside the garden, and in a spot where it can be kept burning, with hedge-clippings, prunings, old stalks, &c., as nothing tends to harbour all kinds of insect life more than collected rubbish, which when burnt becomes a valuable manure. All stakes, pea sticks, &c., should be stored well away from fruit trees, and a supply of insecticides be laid in before the season arrives, so that the infested trees can be tackled at once. A matter often delayed until too late is that of properly labelling fruit trees before the nursery labels are obliterated; it is needful also to see that the wire used for attaching the labels is placed on a stake, or on the wall, and not on the tree itself, as the branches grow so rapidly that the wire cuts in, and the mischief is not detected until a branch is literally strangled, the form of the tree spoiled, and not infrequently the commencement of canker set up.

In fruit culture, either under glass or outside, absolute cleanliness and abundance of light and air are requisites that should never be lost sight of. Trees that are "houey," or full of spray branches, or houses that are dull, stuffy, or close, cannot produce good fruit. For the past five years we have been favoured with very grand summer weather for hardy fruits, and several old discarded varieties have thus been recommended in the Press; but I feel that a word of caution is much needed here, as, should a wet and cold cycle appear, such varieties will cause great disappointment, whereas if growers would but select those varieties that succeed in unfavourable years, they might be confident that such would be still more super-excellent in a really good year. This point has been very pronounced during the year 1900, several quite third-rate Pears having been grand, and many Apples that fail to ripen in the Midlands and northern counties have come up to exhibition quality; but let growers beware how they put their eggs in such baskets. Still we all should be very grateful for these warm sunny years, as they not only help the crops on the trees, but they lay a good foundation for future success by giving us firm, hard, and fully ripened wood, which an ordinary frost will not injure.



Fruit Forcing.

Vines.—Early Forced.—Where the Grapes are ripe, fire heat will only be needed to keep the temperature at about 60° at night, ventilating freely by day. Black Hamburgs will need slight shade, which will also prevent amber-coloured Grapes assuming a brownish hue. Damp the house occasionally, not allowing moisture to be condensed on the berries, but dissipate it by early ventilation. A moderate extent of lateral growth should be encouraged, as it tends to keep the roots active, and to prevent the premature ripening of the foliage, which must be kept clean and healthy as long as possible. If the principal leaves fall a prey to red spider, and there are laterals to utilise the sap, it is likely that the axillary buds will be started prematurely. If fermenting or littery protective materials have been applied to the borders, a portion may now be removed, leaving sufficient for a mulch; and if the roots are active in the lower part of the material, a little fresh may be placed on the surface, to protect them from the atmosphere and impart a neat appearance.

Vines Started at the New Year.—The Grapes are colouring, and need a moderate amount of air moisture until the ripening approaches completion, when a drier atmosphere will be advisable; but moisture must not be entirely withdrawn. Free ventilation should be afforded; a circulation of warm air contributes to good finish and quality. Thorough moisture, but not a sodden and sour condition that induces shanking at the roots, is necessary, and a mulch of sweetened short stable manure, or of cow manure if the soil be light, will generally secure sufficient moisture until the Grapes are ripe. A night temperature of 65°, a little more on warm, and a few degrees less on cold nights, 70° to 75° by day, 80° to 90° with sun heat and full ventilation, closing at 80° all but a small space at the top of the house, will be suitable for ripening.

Late Vines.—These will either have set the fruit or be in flower in most places, commonly the latter. Maintain a night temperature of 70°. Shaking the rods twice a day will be sufficient in most cases to distribute the pollen effectively, but in the case of shy setters do not fail to resort to artificial impregnation, going over the bunches carefully with a brush to remove the "caps" and glutinous matter adhering to the stigmas, afterwards fertilising them by means of a camel's-hair brush charged with pollen from the free-setting varieties, such as Alicante, Black Hamburg, Gros Colman, and Gros Guillaume; though the latter two are not very profuse in pollen-bearing, yet it is singularly effective, and cross-fertilisation is well worth performing, as it not only insures a good set, the pistillate organs, of course, being perfect, but enhances the size of the berries. All large-berried varieties that are good setters should be thinned as soon as the berries are set, and with those that are likely to have very closely set berries it is a good plan to thin them before the flowers expand, as a practised eye can tell which flower buds by their vigour are likely to set, and the removal of the weaker strengthens them wonderfully. Whilst the Vines are in flower do not pinch the laterals, but when the blooms are fairly set remove the laterals at once, so as to prevent overcrowding. Late varieties require a night temperature of 65° when in flower, and 75° to 80° by day, with a free circulation of air, but not a drying current, a genial atmosphere being maintained by damping the floor occasionally. Up to and after flowering, the night temperature should be kept at 60° to 65°, 70° to 75° by day, keeping at 80° to 85° or 90° through the day from sun heat, with moderate ventilation in bright but cold weather, and abundant air when mild. Remove duplicate bunches, reserving the most compact. Recently started houses should be forwarded, seeking advancement from sun heat, but allow a free amount of air, especially in the early part of the day, so as to secure sturdy growths and thick leathery leaves.

Planting Growing Vines.—Those raised from eyes in February or March, and grown in pots or turves, may now be planted out. Such as those put out by the beginning of June will get a good hold of the soil this season, and ripen the cane sufficiently for cutting down to the first wire of the trellis, or even three buds there, and thus obtain a cone of bunches on each Vine the following season. Press the soil firmly about the ball or turf, giving a moderate watering, mulching with an inch of short manure, and shade from bright sun until they become established.

The Kitchen Garden.

Thinning Crops.—The thinning out of superfluous plants should be commenced as soon as possible, to prevent any probable injury arising from overcrowding. Among those to be dealt with are Onions, Carrots,

* A paper read before the Royal Horticultural Society, on Nov. 20th 1900, by Mr. GEO. BUNYARD, V.M.H.

Parsnips, Lettuce, and Parsley, also seed beds containing Broccoli, Savoy, Borecole, Cauliflower, and Cabbage. Where the plants are yet small too free thinning should not be carried out, except where there is an approach to a crowded condition of the seedlings. The spaces between the rows may be lightly stirred with a Dutch hoe, thus destroying weeds and promoting growth. Onions and Carrots especially may be lightly dusted with soot as a check against the fly, which does injury when the crops are in a young state by depositing eggs on the plants, which hatch into maggots.

Potatoes.—As soon as the tops of the Potatoes are through the soil, so as to define the rows, ply the Dutch hoe between, as simultaneously with the growth of the tubers weeds also make rapid progress. If the hoeing, however, is done on a fine sunny morning, all the weeds will be dead before evening. Before too much top growth is made earth up the rows.

Celery.—The trenches for the Celery crop should be prepared; a piece of ground from which Broccoli or Winter Greens have been cleared is suitable. Mark out the trenches 5 feet apart, the width may be 15 inches. Cut down each side with a spade, having a line stretched along to insure a straight cut; remove the soil to the depth of a spit, take out the loose soil, and place in 6 inches of rotted manure, which partly bury by digging in, placing some good soil on surface to plant in. When finished the trench will be shallow, but sufficiently deep to hold water about the plants. For an early crop the plants may be placed out now in single rows, lifting the strongest for the purpose, with good balls of soil and roots. The white varieties are good for early crops, being more quickly blanched when grown large enough. Seedlings from a late sowing should be pricked out on a bed of soil on a spent hotbed.

Beans.—Broad Beans and Dwarf French Beans may have soil drawn to them on both sides of rows, this steadying the plants somewhat. Sow more seed of the latter, as well as Scarlet Runners. The advanced rows of Runners should have tall stakes placed to them.

Peas.—Make another liberal sowing of main crop varieties, including Champion of England, G. F. Wilson, and Veitch's Perfection. Place sticks to all rows as soon as the Peas are well above the soil. In dry weather afford water to the early rows. Keep down weeds, and the surface soil loose on each side of rows.

Turnips.—Make a sowing of White Stone or Early Snowball Turnips. The soil should be rich. Sprinkle a dressing of superphosphate along the drills previous to sowing, but should the weather be hot and dry, light soil must be watered, soaking the drills.

Lettuce.—Plant out the thinnings from the Lettuce beds 6 inches apart on Celery ridges or other position where the soil is good. Make a further sowing of both Cos and Cabbage varieties in drills 12 inches apart.

Brussels Sprouts.—Plant out those raised early and pricked out in boxes, from which they can be transferred with good balls of roots; 2½ feet of space between the rows is not too much for this crop, the plants being 18 inches apart. If raised outdoors it will be necessary to transplant them 4 inches apart in order to strengthen them for the final planting.

Cauliflowers.—The earliest varieties ought now to be finally planted, selecting rich ground and an open position. They should lift with good balls of soil and roots, either from boxes or frames. Plant about 14 inches apart, in rows 2 feet asunder. Allow the larger-growing Autumn Giants more room. Prick out seedlings of the latter 4 inches apart to strengthen for later planting.

Broccoli.—Sow seed of the latest varieties of these, such as Cattell's Eclipse, Late Queen, and Veitch's Model. Main crop varieties, such as Snow's Winter White, Veitch's Self-Protecting, Leamington, now in the seed beds, should be transplanted a few inches apart.

Tomatoes.—Plant out against a sunny wall or fence some strong plants of approved outdoor varieties, these including Laxton's Open Air, Earliest of All, and Large Red. It is also a good plan to establish some plants in pots outdoors, growing them in a convenient situation, and taking plants indoors in autumn.

Vegetable Marrows.—Good plants may now be planted out either in the open garden in rich soil, or on prepared positions on heaps of decomposed leaves or vegetable matter. Give slight protection for a time until established.

TO CORRESPONDENTS

•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Gerbera Jamesoni (J. C. S.).—This is a South African native, and though it is a charming subject we cannot confidently recommend it to you. As regards soil and position, its requirements demand consideration. It does not succeed on cold damp soils, and it is hardy only in the mildest localities. It is usually grown as a cool greenhouse pot plant with plenty of light and air, in a compost of sandy loam and peat. Seeds sown now in gentle heat would furnish a supply of plants. It grows 15 inches to 18 inches high, and bears solitary heads of glowing scarlet flowers 3 inches across, and having an orange disc or centre. It is a Composite. For price apply to any of the hardy plant growers who advertise in our columns.

Wood for Fruit Shelves (H. W. H.).

—The wood to be used for fruit shelves must be dry, thoroughly seasoned, and not likely to contract dampness about it. There should be no liability for it to transmit taint to the fruit. As a rule, ash or beech is preferable; but resinous and gummy pine woods should be avoided.

Rove Beetles (J. R.).—Some of the Rove beetles feed on animal matter, including living insects, and they much frequent rotten animal and vegetable refuse. Both grubs and insects help us in clearing off other insect presence. They have a peculiar and characteristic habit of arching up their hinder quarters when disturbed or annoyed. This is due to fear, and is no doubt intended to instil the same feelings into whatever

has caused them to so act. The accompanying illustration will show a group of these peculiar beetles, also called Devil's Coachhorses.

Myosotis for Bedding (H. S.).—The best Forget-me-not, or Myosotis, for spring bedding is *M. sylvatica dissitiflora*; the best white, *M. alpestris alba*. These plants could be used effectively far more frequently than they are. Seeds may be sown from now to the end of June, in light sandy soil in a slightly shaded situation, to be watered in dry weather. Prick out the young plantlets when they are large enough to handle, placing each about 3 inches apart. In autumn or early spring they may be planted with good balls of soil.

Ivy-leaved Pelargoniums Diseased (G. G.).—The leaves are what is termed "rusted," and the rusty spots are produced by the rust mite, *Tarsonymus gerani*, which somewhat resembles a thrip in the larval stage, and by its bites and mode of reproduction causes considerable injury to the foliage, though not completely effecting its collapse, as frequently occurs in the case of tuberous-rooted Begonias. It, however, greatly disfigures the foliage, and this, sooner or later, shrivels. The attacks are chiefly confined to plants under glass, plants affected usually recovering when placed outdoors, especially when the weather proves moist and favourable to growth. Dip the plants in tobacco-water, or spray them with it, so as to coat the leafage on both sides with the finest possible film of the tobacco water. This may be made by steeping shag tobacco in water at the rate of 4 ozs. to the gallon. It is well to pour boiling water on the tobacco, cover the vessel closely, and allow to stand until cold, then strain. The spraying or dipping should be repeated at intervals of about four days, two or three times, in order to effect a clearance from the pernicious pest, which is greatly on the increase, and infests a great number of plants, such as Gloxinias, Gesneras, Begonias, Pelargoniums (Ivy-leaved varieties most), Cyclamens, and occasionally Chrysanthemums, causing, in the latter, a rusted appearance of the leaves and their shrivelling.



ROVE BEETLES.

Sowing Cinerarias (A.).—Good and ripened seeds from current year's plants can be had for sowing in June or July, preferably June.

Horticultural Directory (St. Andrews).—From this office, price 1s. 3d. It is published annually, and contains the addresses of all the well-known gardens, gardeners, seedsmen, park superintendents, &c., in the United Kingdom, besides a deal of useful information on various business matters.

Dendrobium formosum giganteum not Flowering (N. H. P.).—It ought to succeed in an intermediate house, but yours is perhaps too cool. Could you give it additional heat when making its growths, and ripen them well off in a dry atmosphere, but with plenty of air? As it is growing freely you have good chances to see it flower.

Vine Leaves Warded (P. R.).—There is no fungus upon the leaves. The warts are simply the result of too close and moist an atmosphere, and the shrivelling at the edges of the leaf is owing to the scalding from air being given rather late. It is just possible that scalding may have been due to spots on the glass. Early air giving and atmosphere a little drier, we think, to put matters right.

Orchard House Management (C. E.).—The temperature of 120° is too much for orchard house trees; better have it in the hottest days under 100° by giving more air, or even by shading the glass a little with whitened water outside the glass. You can guard against an excessively dry atmosphere by sprinkling the borders and paths with water. Black fly may be destroyed by brushing with water containing 4 ozs. of soft soap and 4 ozs. of quassia to the gallon, after boiling it in 6 pints and allowing it to settle. This should only be used on the parts affected. The whole house may be washed with water as above when the crop is fully set and swelling, but the quantity stated would be strong enough for 16 or 18 gallons, and should be mixed clear with the other water. Watering is governed by the dryness of soil, &c.; it is impossible for us to state here how and when to water. Sometimes it may be each day, or twice a day, or, again, not for a couple of days. The medium must be observed. Orchard houses are frequently fumigated.

Diseased Chrysanthemum Leaves (G. H.).—The leaves are infested by the Chrysanthemum leaf blight fungus, *Cylindrosporium chrysanthemi*, which causes large dark blotches to appear on them, and the affected leaves turn yellow or rusty, and shrivel, hanging down and lying close to the stem. Numerous fruiting pustules are formed on the diseased patches; these produce innumerable long, narrowly spindle or club shaped colourless septate conidia or spores, which rupture the epidermis of the host, become diffused and spread the disease rapidly. The spraying with fungicides appears not to have any decided effect on the disease, though dusting with anti-blight and other fungicides containing sulphate of copper checked the spread of the fungus. There appear also traces of rust, not of the fungus, but of a mite, and in such case treatment with methylated spirit, diluted about half with water and sprayed on, coating both sides of the leaves, has been found to act well against both the fungus and the mite. It is necessary to ascertain a safe strength at which to apply the dilute methylated spirit, as this not only differs in percentage of added substance, but in strength, and the foliage has varied degrees of susceptibility to injury. Doubtless the best course to pursue is to remove and burn the affected leaves, and dust the plants with tobacco powder on both surfaces of the foliage. The disease is most prevalent when the plants are kept rather close in frames or houses, but it also occurs outdoors, the leaves collapsing one after another from below upwards, diseased foliage hanging down close to the stem, and the flower buds do not expand properly, sometimes collapsing before expansion.

Names of Plants (C. W.).—1, *Dendrobium Wardianum*; 2, we do not undertake to name mere varieties of florist's flowers, consult a Pansy specialist. (F. A. Little).—The orange crimson flower is *Streptolobos Jamesoni*; the other shoot is *Sophora (Edwardsia) tetraptera*; could you favour us with notes on its culture? (A. P.).—The numbers of your specimens became confused; the Trumpet Honeysuckle (*Lonicera sempervirens*); *Grevillea Thelemanniana*, reddish cluster flowers; *Phyllanthus lathyroides*, the shoot with pinnate leaves. (R. S.).—1, *Epimedium muschianum*; 2, *Viola cncnllata*; 3, *Dendrobium crystallinum*. (R. Patterson).—1, *Agapetes bnxifolia*; 2, *Carex Brunnea variegata*; 3, *Scilla hispanica alba*; 4, *Cytisus albus*.

Six Days Shalt Thou Labour.—In the days of Joseph and Isaac of Israel, the sternness of the Jewish Sabbath law was such that they were bound to limit their pedestrianism to within 700 yards of their tents on that day of the week. It was sacrilege to go beyond the appointed limit. The fourth commandment had a great significance in those days. But what of our times? We are less Sabbatarian certainly, for a couple of Sundays ago I was surprised, though not displeased, to see scores of working men busy in the allotment gardens rented to them by the Borough of Richmond. The acreage of these gardens at Richmond, Surrey, is considerable, and presented a very active scene. Boys were wheeling in manure to the plots, while the fathers and elder brothers did the digging. Others were variously sowing seeds, or planting, and everybody was busy. On a beautiful Sunday forenoon there they were, gaining health and profit to themselves. Had they not their gardens to occupy them, many of the tenants would simply pass an idle day, and the taverns would probably attract not a few.

Covent Garden Market.—May 22nd.

Average Wholesale Prices.—Fruit.

	s.	d.	s.	d.					s.	d.	s.	d.
Apples, cooking, bush. ...	5	0	to	7	0	Melons, each	1	6	to	2	6	
„ Tasmanian, case	12	0		15	0	Oranges, case	15	0		25	0	
Figs, green, doz.	10	0		12	0	Pears, 1/2 case	9	0		10	0	
Grapes, Hamburg, lb. ...	3	0		0	0	Pines, St. Michael's, each	2	6		4	6	
„ Muscat	4	6		5	0	Strawberries, lb.	2	0		3	0	
Lemons, Messinas, case	9	0		12	0							

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2	0 to 3	0	Leeks, bunch	0 1 1/2 to 0 2
„ Jerusalem, sieve	1	6	0 0	Lettuce, doz.	0 6 1 0
Asparagus (Spruce Grass)	0	0	10	Mushrooms, forced, lb. ...	0 8 0 9
„ English, 100	1	6	2 0	Mustard and Cress, pnnt.	0 2 0 0
„ Giant, bundle	15	0	20 0	Onions, Dutch, bag	5 0 0 0
„ Spanish, bundle.	1	0	1 3	„ English, cwt.	5 0 0 0
Batavia, doz	2	0	0 0	Parsley, doz. bnchs.	2 0 3 0
Beans, French, lb.	0	9	10	Potatoes, cwt.	3 0 7 0
Beet, red, doz.	0	6	10 0	„ New Jersey, lb.	0 3 0 4
Broccoli, bush.	0	0	1 0	Radishes, doz	0 6 0 9
Cabbages, tally	3	0	5 0	Rhubarb, doz.	1 0 1 3
Carrots, doz. bnch.	2	0	3 0	Savoy, tally	4 0 5 0
Cauliflowers, doz.	1	0	2 0	Scotch Kale, bushel	0 6 1 0
Chicory, Belgian, lb.	0	4	0 0	Seakale, best, doz.	6 0 8 0
Corn Salad, strike	1	0	1 3	Shallots, lb.	0 4 0 0
Cucumbers, doz.	2	6	4 0	Spinach, bush.	4 0 5 0
Endive, doz	1	3	2 0	Tomatoes, English, lb. ...	0 9 1 0
Greens, bush.	1	0	1 6	Turnips, doz.	2 0 3 0
Herbs, bunch	0	2	0 0	Turnip tops	0 9 1 0
Horseradish, bnch.	1	2	1 6	Watercress, doz	0 6 0 8

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.	
Acacias, var., doz. ...	12	0 to 18	0	Ficus elastica, doz. ...	9 0 to 12 0	
Acers, doz.	12	0	24	0	Foliage plants, var., each	1 0 5 0
Aralias, doz.	5	0	12	0	Fuchsias	8 0 9 0
Araucaria, doz.	21	0	30	0	Geraniums, scarlet, doz.	5 0 6 0
Aspidistra, doz.	18	0	36	0	„ pink, doz.	6 6 8 0
Azaleas, various, each ...	2	6	5	0	„ King of Denmark, doz.	5 0 6 0
Boronias, doz.	20	0	24	0	Hydrangeas, white, pink	9 0 12 0
Crotons, doz.	18	0 to 30	0	Lycopodiums, doz.	3 0 4 0	
Dracæna, var., doz.	12	0	30	0	Marguerite Daisy, doz. ...	8 0 12 0
Dracæna, viridis, doz. ...	9	0	18	0	Mignonette, doz.	6 0 9 0
Erica, various, doz.	8	0	18	0	Myrtles, doz.	6 0 9 0
Euonymus, var., doz.	6	0	18	0	Palms, in var., doz.	15 0 30 0
Evergreens, var., doz. ...	4	0	18	0	„ specimens	21 0 63 0
Ferns, var., doz.	4	0	18	0	Pelargoniums	10 0 12 0
Ferns, small, 100	10	0	16	0	„ Ivy leaf	6 0 12 0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums, doz.	2 6	to 3 0	Maidenhair Fern, dozen		
Asparagus, Fern, bunch	1 6	2 6	bnchs.	4 0	to 6 0
Camellias, white, doz. ...	2 6	0 0	Marguerites, white, doz.		
Carnations, 12 blooms ...	1 6	2 0	bnchs.	3 0	4 0
Cattleyas, doz.	6 0	9 0	„ yellow, doz. bnchs.	2 0	3 0
Cornflower, doz. bnchs. ...	1 0	1 6	Narcissus Pheasant Eye		
Eucharis, doz.	2 0	0 0	doz.	1 0	1 6
Freesia, doz. bnchs. ...	0 0	0 0	Odontoglossums	2 0	3 0
Gardenias, doz.	1 6	2 0	Roses, Niphetos, white,		
Geranium, scarlet, doz.			doz.	1 0	2 0
bnches	4 0	0 0	„ yellow, doz. (Perles) ...	2 0	0 0
Gladioli, doz. bnchs. ...	9 0	12 0	„ red, doz.	2 0	0 0
Iris, Spanish, doz. bnchs.	8 0	10 0	„ Catherine Mermet, doz.	2 0	4 0
Lilium lancifolium album	2 0	3 0	Smilax, bunch	3 0	4 0
„ „ rubrum	3 0	5 0	Spiraea, doz. bnchs. ...	4 0	6 0
„ „ longiflorum	2 0	3 0	Stock, white, doz. bnchs.	2 0	2 6
Lilac, white, bunch, ...	3 0	0 0	Sweet Peas, white, doz.		
Lily of the Valley, 12 bnchs.	8 0	12 0	bnches	4 0	6 0
Mignonette, English, doz.	4 0	6 0	„ coloured, doz. bnchs.	4 0	6 0

Trade Catalogues Received.

K. J. Kuyk, Continental Nurseries, Hillegom, Holland.—*Wholesale Catalogue of Dutch Bulbs.*

L'Horticole Coloniale (Société Anonyme), Parc Leopold, Bruxelles, Belgium.—*Special Illustrated Catalogue of Orchids.*

Phenological Observations.

MAY 24TH TO 30TH.

24 Fri.	Small Heath butterfly.
25 Sat.	Bees first swarm.
26 Sun.	Grizzled skipper butterfly.
27 Mon.	Garden carpet moth.
28 Tu.	Sandpiper first seen.
29 Wed.	Stinging fly seen.
30 Thr.	Swallowtail butterfly.

PLANTS DEDICATED TO EACH DAY.

Oriental Poppy.
Common Avena.
Rhododendron.
Buttercup.
Mountain Bluebottle.
Dingey Iris.
Spearwort.



The Veterinary Surgeon.

A MUCH-ABUSED and long-suffering man. He is, as a rule, sent for when a case is getting into a critical, if not hopeless, state, and is confidently expected to work miracles. We are not sure that this habit amongst farmers of avoiding the employment of the "vet." as much as possible is not quite as much owing to a want of faith in the average veterinary practitioner as in the desire to save his fees. In practice, a farmer rarely consults a "vet." as to ailment amongst sheep, the shepherd being expected to possess all the necessary knowledge as to their treatment, and the knife is freely resorted to should there be any doubt as to the wisdom of administering drugs. The same applies very generally also to cattle, veterinary skill being rarely requisitioned. In bygone days, when the old-fashioned village farrier was a feature of country life, and farmers knew less of veterinary science, drugs also being dear and difficult to obtain, the farrier did most of the cow doctoring. Since the latter has died a natural death, and the fully qualified, though more pretentious, graduate of the Royal College has it all to himself, he really gets no more practice amongst cattle than he used to do in former days. The result of this is that a wide district is necessary to keep a really good man, his work being practically confined to horses, and those who live in out-of-the-way places are often hardly able to get a "vet." at all, and then only with great difficulty and expense. We have had experience of living near a really good man, also of having no one worth sending for within twelve miles, and we know the feeling of comfort produced by the former state of things. The advice of a very shrewd old farmer used always to be, "If you have anything amiss with a horse give it a pint of linseed oil and send for the 'vet.';" but what can be done when there is not one to send for?

We often hear medical men blamed because things have not gone as well with their patients as their friends hoped and wished; but a veterinary surgeon always has to accept full responsibility for all want of success in his treatment, whilst receiving very meagre credit for success. In a very large proportion of cases of loss blame for sins of omission and commission is due to the farmer and his employés, whereas the "vet." has it heaped upon him after things have gone the wrong way, although he may have been working at a practically hopeless case, or in the dark as to the real history of it; information being withheld by an attendant because speaking out would involve censure upon himself. In how many other cases has science been hindered by the want of knowledge as to the manner in which the suffering animal has recently been treated. We knew a "vet." who made no secret of the fact that he often suppressed his knowledge of malpractices with drugs on the part of farm men who attended upon horses, because of having undertaken to do so in return for full private information as to what drugs the horses had been doctored with. A man who attends professionally to large numbers of farm horses needs much of the qualification of a detective, for he is constantly coming across little puzzles which need considerable skill to solve. Another man who had a good connection, although not a qualified man, used to sell balls and powders in considerable quantities to wagoners and horsemen. He excused himself for so doing on the ground that if he did not supply them they would get supplied elsewhere, and probably with something deleterious, which he took good care not to let them have; whilst it did not matter to him whether the master or the servant bought horse medicine, and, at any rate, the latter paid cash, which his master did not.

How careless farm servants are, and how handicapped a "vet." often is, was shown by a case which occurred but a few days ago. The "vet." was fetched a distance of five miles, and was shown a horse which was lame, but the foreman quite forgot to show him a mare in the next box, and which was the chief cause of his being sent for. The visit was paid late in the evening, so the omission was not discovered until next day, when a hasty message brought him too late to be of use. In his own words, "£60 worth of horseflesh was practically thrown away." As may be gathered from what we have written, we know there are badly qualified as well as good men practising in the country. It is so important that a skilful man should be available when required, that where there is not such a man it would pay farmers to form an association, with subscriptions proportionate to the size of their holdings, and to give an annual subsidy to a first-class man to induce him to come into residence. Where there is a very large estate

the landowner would be easily induced to take a lead in the matter: but we fancy that districts dominated by big houses are generally well served, and it is only in remote, non-residential neighbourhoods where such action would be found necessary or beneficial. One result of the formation of such an association would be to enhance the interest taken in the man and his work, and he would probably be much more freely sent for than he would be if the farmers had no monetary interest in him. Suggesting that farmers should combine for mutual benefit is, however, almost a waste of words; yet, in view of the fact that complaints of the want of a skilled veterinary surgeon are so often heard, the idea is worthy of consideration.

Work on the Home Farm.

Sunny weather, with easterly winds but no actual frost, has much benefited the Wheats, and they have quite lost the slight rustiness which had attacked them. Spring Corn also is making sure, though steady, progress, and it is quite possible that we may have an early harvest notwithstanding a late spring time. Work on the fallows is not so satisfactory; the weather has come too much in lumps, and a true British mixture would be desirable now. Light and easy working soils are all right, and there is no difficulty at all, but on the stiffer land a good Turnip mould will not be easy to obtain. The successful working of strong land is no easy matter, and requires infinite patience as well as faith—patience to wait and look on during wet weather whilst the teams of more fortunate neighbours are doing useful work, and faith that when the land has become thoroughly dry, the rain in sufficient quantity to properly reduce it to a pulverised condition will be forthcoming when wanted. Heavy soil is indeed a good servant, but a bad master.

Potato ridges have been harrowed down, and none too soon, for the halm was appearing in many places. The ridges on land that had been Clover lea were very rough, and have taken a good deal of reducing to a friable condition. A very useful implement for the purpose is a Cambridge roll, with a certain number of the rings taken out at intervals, and a strong washer substituted, the washer occupying the part which passes over each ridge, and the rings crushing the rough clods in the furrow. An iron age hoe following this, as well as preceding it, makes capital work. To grow Potatoes well the land must be well stirred and ventilated, in fact for all crops the proper aëration of the soil is an important factor; but this all means work, and work is the thing that costs money, which very few farm products will purchase in paying quantity, wherein lies the difficulty of farming at the present day.

Farmers are enjoying better luck than during the last few years with their foaling mares, which, taken in connection with the small proportion of barren mares, is very satisfactory. Farm horses have been rather scarce of late, and two or three successful breeding seasons were badly wanted. Several farmers of our acquaintance are being seriously inconvenienced by having so many mares foaling, and by their inability to obtain temporary substitutes at a reasonable cost.

How to Weigh a Haystack.—Measure the length and breadth of the stack; take the height from the ground to the eaves, add to this last one-half of the height from the eaves to the top; multiply length by breadth, and the product by the height, all expressed in feet; divide the amount by 27, to find the cubic yards, which multiply by the number of pounds supposed to be in a cubic yard—viz., in a stack of new hay 132 lbs. avoirdupois each; if old hay, 154 lbs. each.

The Study of Rooks and Crows.—A German savant, Herr Rörig, has devoted years to the investigation of the question whether crows are useful or deleterious birds. He has lately published some interesting figures on the subject, based on the examination of the contents of the stomachs of 3259 carrion crows and 1500 rooks. He calculated that the grain eaten by the 3259 carrion crows during a whole year would have a money value of about £900. He estimates that the same number of birds inflict an annual damage of about £1450 by the destruction of young hares, partridges, &c. That is to say, each crow inflicts damage to the amount altogether of about 14s. annually. It is more difficult to calculate the service rendered to the farmer by the same birds. This service consists in the destruction of mice and pernicious insects, especially cankerworms and wireworms. Herr Rörig estimates that in the process of development the wireworm will destroy ten plants, a cankerworm twenty, and that a field mouse, with its progeny, will destroy 1000. He calculates that the 3259 crows referred to would benefit the agriculturists to the amount of about £2500 per annum by devouring injurious insects, &c. According to these estimates, the value of the benefit effected by the carrion crow exceeds the value of the damage it causes by 11d. per annum. With rooks (Saatkrahe) the difference is greater, amounting to over 4s. per annum. Herr Rörig says that his figures must not be taken as being exact, but as being approximately true. They serve, however, to show that crows in general are not to be regarded as deleterious birds, and that rooks are extremely useful. He estimates that Germany possesses between two and a quarter and two and three-quarter million crows of all kinds, and that these birds unwittingly represent to agriculture a capital of from £400,000 to £500,000.



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Journal of Horticulture.

THURSDAY, MAY 30, 1901.

Wild Flowers of Old English Gardens.

WE light upon several handsome and showy Columbines in gardens, though this group does not enjoy a very large popularity. A high-class garden may admit *Aquilegia* fragrans, from the Himalayas, with scented flowers of pale lilac, or the taller *A. truncata*, of California, displaying rich scarlet bloom; and in humbler gardens we see our native species or its varieties. The common Columbine they called it, *A. vulgaris*, scarcely common anywhere as a wild plant now; some doubt if it ever was. It formerly occurred on meadows near London, and was early introduced to gardens. One of the old writers named it *Herba leonis*, because it was the lion's favourite plant; we wonder how he picked up such a strange idea. That our ancestors were observant of this singular flower is shown by its appearance in heraldry; one old crest exhibits a hand holding a stalk, and another shows a black chevron next to three Columbines. That name, no doubt, was suggested by a resemblance between the flower and the heads of young pigeons in a round dish, but Twamley, in a poem, compares it to a fool's cap. Early last century London gardeners had produced varieties having double flowers of white, pink, and dark crimson, also a reddish form with the nectarles obliterated.

About a dozen species of *Anemone* are known to gardeners. I think of these the Poppy *Anemone*, *A. coronaria*, is the most popular and varied; several of them are natives, somewhat changed by culture. Windflowers some have been called for a long while, and certainly the winds of spring are often seen treating their blossoms roughly. But one old botanist, referring to the familiar woodland species, declares this species likes the March wind, and refuses to open till it blows briskly. Gerarde, commenting on the dispute whether the *Anemone*, the *Adonis*, or some other plant, sprung from

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trees, 1/10 gross; Wall Nails, same price as ordinary nails; Glazing Staples, 1/6 gross; Plant Pots, also Pans, 3/- cast any size (card. ford.); Pot Suspenders; Pot Crocks; Orchid Baskets; Garden Syringe; Spray Diffuser, for spraying insecticide, &c., complete, 2/6; Powder Diffuser, for diffusing powder on plants, filled, 1/-; Flower Grip Holders of all kinds; Greenhouse Shading, 9d. tins—if not satisfactory after trial money will be returned; Mushroom Spawn, very prolific, 4/- per bushel; Insecticide, 1/3 dozen boxes; Mealy Bug Destroyer, 7d. bottles; Horticultural Soap, 1½lb tins, 1/-; Powder Weed Killer, if not the best and cheapest after trial money will be returned, 1/6 tin, makes 16 to 50 gallons; Slug Killer Powder, certain destruction to slugs, &c., and a splendid fertiliser, from lb. tins, 9d.; Lawn Sand, kills all weeds and nourishes the Grass, from lb. tins, 9d.; Tobacco Powder, extra fine ground, from 9d. tins; Seed Germinator, 6d. boxes (lasts for years), no seed should be sown without a dressing of this; Fertiliser, perfect plant food, from lb. tins, 9d.; Manures, &c., &c. All carriage and package free. **SAMPLES GRATIS.**

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the tears of Venus, remarks, slyly, it might have been the Anemone suitably enough, since the flower is fragile, and as brief as a woman's tears. The short duration of the flowers made the Anemone an emblem of sickness, yet a plant of it was supposed to have healing powers if gathered while coming into bloom, then tied round the neck of a sick person. Again, the Wood Anemone, *A. nemorosa*, was watched because the plant, by its indications, is one of the barometers supplied to us by Nature. When brought into gardens double flowers were produced, and also some variations of colour, but it is a species which will not flourish in the close atmosphere of a large town. Another, of rather taller growth, more frequently cultivated, suitable for the border or rockery, is the Pasque-flower, *A. Pulsatilla*, easily propagated by division, named by the old botanists after the Easter festival; there seems no truth in the statement that the juice was used for staining Easter eggs. There exist several handsome varieties, mostly recent.

Rather rare and local is the Mountain Anemone, *A. apennina*, a western species, growing wild in exactly the same positions where it occurs on the Continent. Welsh specimens might have been planted in gardens by admirers of the flower, but Loudon considers that it was brought from Italy by some Dutch gardeners two centuries ago. Someone obtained a double variety, which is, however, little improvement on the ordinary form. The yellow Wood Anemone is aptly named *A. ranunculoides*, since it has yellow flowers, which remind us of the Buttercup tribe. It has been found near Wrotham, Kent, and in a few woods, "escaped from cultivation" some assert, but this theory will not hold, for it had never been previously a garden plant in England. Now it may be seen occasionally imported from the Continent. There are purple and white varieties. Akin to the Anemone group is the little Pheasant's Eye (*Adonis autumnalis*); unlike them in its late flowering, the black spotted, crimson flowers are very distinctive. It used to be found about cornfields near London, and was once commonly grown in gardens, but has almost vanished, leaving its foreign relative, the early and hardy *A. vernalis*.

The Pæony, I observe, is rather a popular flower in some of the gardens of North Kent, but I question whether *Pæonia corallina* ever occurred wild in the district, though it grows abundantly on islands upon the river Severn. It is a doubtful native. Doubtless our ancestors would have brought it into gardens if they had had the chance to do so. We need not hesitate, I think, about allowing the Monkshood (*Aconitum Napellus*) a place amongst British plants, from its free growth in some watery spots. I do not think in the olden time people would have encouraged such a frightfully poisonous species, but somebody is said to have introduced it from France or America. Whenever opportunity offers I urge its removal from gardens, every part of the plant being dangerous, and the seeds especially to be avoided, as they are liable to lodge in the eyes of children. Our British Larkspur was pioneer of the many exotic Delphiniums, varieties or hybrids, which are now of great importance in gardens, and receive much attention from nurserymen. The annual field Larkspur (*D. consolida*) formerly occurred at Eltham, near London, and was not uncommon in several counties. Under culture the plant became a perennial and branched, doubling its usual height, and the flowers changed their colour.

Just now the brilliant blue of some of our May mornings has its counterpart in the masses of wild Hyacinth, popularly known as "Bluebell," which are flowering in our Kentish woods, especially about the clearings. Clumps of it are often noticeable in village gardens; under cultivation it grows taller. Occasionally the flowers of wild specimens are pink and white; at first they called it the "Unwritten Hyacinth," because its leaves did not bear the mark other species had, and supposed to represent the Greek for "Alas!" Properly, however, this is one of the Squills, being *Scilla nutans*, though so long regarded as a Hyacinth. But the plant of the ancients, associated with Ajax and Hyacinthus, may have been a Lily or a Gladiolus for aught we know. So deeply do the bulbs of this plant descend into the ground that their removal gives some trouble when a piece of woodland, which is their abode, has to be brought under cultivation. The two-leaved Squill, *S. bifolia*, comes earlier into flower than the preceding species; it was brought to our gardens from South Europe, and likes sunny spots. There are several varieties. It is admitted to the British lists, being found apparently wild in the West of England. It is not probable we should find now the autumnal Squill, *S. autumnalis*, displaying its cluster of rose-tinted flowers in a London garden. Years ago the plant was sometimes transplanted, occurring as it did then at Blackheath, Kew, and elsewhere near the metropolis. It flowered in September.

One of our writers upon garden flowers remarks that Iris foetidissima is a well-known but undeservedly neglected British plant; the Latin name is possibly against it, and the popular one of Stinking Iris is also not inviting. I do not think the flower malodorous even when growing in damp woods. The leaves, on pressure, have a peculiar smell, which some compare to that of cold roast beef,

hence this Iris has been called the "Roast Beef Plant." That the heads of this Iris have been sold in bunches for decoration shows that it cannot have been greatly disliked. I am not sure that plants are raised at present to send into market. Formerly more abundant as a wild flower than it is now, it was conspicuous enough to be attractive to admirers of flowers, and it was brought into gardens; it also came to be regarded as an English representative of the Oriental Iris, but less varied in colour. It may be inferred that the true Iris, if not many-coloured, showed at least three, or it would not have been named after the rainbow, though the ancients hardly recognised its seven colours. But it has been said the Iris was thus named, because it flowered during the moist weather of spring, when rainbows often appeared. This species yields a variety with variegated leaves, and the flowers are sometimes yellow; the coral red seeds are objects of great attractiveness in autumn.

A few years since one of my friends wanted particularly some flowers of the Fritillary, Gerard's "Chequered Daffodil," which he says surpasses Art's most curious painting, the petals being marked like a chess-board. It has given a name to a beautiful and very distinct group of British butterflies. Not having an opportunity for seeking the plant in its natural localities, he visited sundry old style gardens where he might hope to find it. For some time he could not discover anyone who grew it, though several had formerly had specimens, but gave up the Fritillary for more fashionable flowers. Another old name for *Fritillaria meleagris* was the Snake's-head, and, yet more odd, that of Turkey-hen. It is to be found yet in some moist meadows; at one time Londoners had no difficulty in getting plants from the vicinity of the Thames and Lee. It really deserves to be restored to our gardens, for it is a showy plant, and will thrive many years in ordinary soil.

Allied to the Lilies are some species of *Ornithogalum*, bulbs of easy culture, of which one in particular was brought into gardens, being regarded as a sacred plant in some way connected with the birth of Christ. This is *O. umbellatum*, having flowers in corymbs, the petals brilliant white above and green beneath; it occurs all over England, flowering about May. Linnæus observes that it is really a common plant in Syria. We notice it still in cottage gardens. It is one of the plants belonging to the floral clock, the flowers remaining open usually between eleven and three. Then there is the tall Star of Bethlehem (*O. pyramidale*), but rather rare; it has been imported from South Europe, sometimes planted along borders, and which produces very fine spikes in rich loam. Loudon remarks that the yellow Star of Bethlehem (*O. luteum*), another native, and one that blooms early, was frequently supposed to be an exotic species.—J. R. S. C.

Book Notice.

The British Gardener.*

"The British Gardener" is a handy book, comprising 410 pages of medium size, and pertains to delineate the principal gardening operations of the seasons, and to discuss the cultural needs of all the more generally grown garden plants. The limited extent of the space at command of course debars the author from entering fully into minutiae; but he has furnished concise, reliable, and easily understood advice. Where lists of varieties have been provided, only those that have stood the test of time and trial have been included, so that the inexperienced young gardener on assuming his first head gardenership, or the indulgent amateur horticulturist, may turn to the lists in this book with the assurance that what is here commended are the best sorts for his purpose. The principles of garden designing are briefly detailed. The inclusion of such a chapter is scarcely worthy of approval in such a book as this. There are enough and to spare of ill-made and poorly planted gardens throughout the land, and it seems to us that those who are in no way capable of undertaking such works may attempt garden designing on the strength of the guidance here given.

The more popular stove and greenhouse decorative plants receive attention, and chapters are devoted to fruits and vegetables, and another to "Flowers," under which bedding is discussed, together with notes on alpine and herbaceous plants. The accuracy and reliability of the publication as a whole may be understood when we state that the proofs were all revised by no less an authority than the late Mr. Malcolm Dunn, V.M.H. A few illustrations referring to the training and pruning of fruit trees are included in the book. Paper and printing are very good, and besides having the contents arranged alphabetically, a concise index is also provided. It is a good book for the less proficient gardeners or amateurs.

* "The British Gardener," by WILLIAM WILLIAMSON. Messrs. Methuen & Co., 10s. 6d.

Watering and Mulching Fruit Trees.

THE regularity with which good crops of fruit are produced under glass annually may be accounted for in two ways; one is that the trees are protected from the vicissitudes of weather, the other that strict attention is paid to watering when necessary. In the majority of gardens wall trees are usually amply protected during blossoming time, and yet such trees often fail to set a good crop of fruit for reasons which I shall presently treat of, after I have advanced a few remarks about protecting them generally. Hardy fruit culture is now a matter of such vital importance that I think the time has arrived for us to experiment more generally, and take more vigorous measures to evolve a system of culture by which crops in the open air may be obtained with a greater amount of certainty, and I am fully convinced that some improvements may be made in that direction. Nearly all planters now recognise the importance of providing shelter for the north and east, and in cases where such shelter has been secured by planting quick-growing trees, the cold cutting winds of spring do not have so disastrous an effect upon the trees when in flower. It is also quite possible to secure great advantages by selecting suitable sites for planting, and I am inclined to consider the question of site as being of more importance than that of soil, for when the soil is comparatively poor it is not a difficult matter to increase its fertility by manuring; but no matter how suitable a soil may be for fruit growing, if the situation is an exposed or low lying one, sharp frosts too often ruin the prospect of a crop. In counties where the land is undulating splendid sites for planting may often be secured. The American plan of enveloping fruit orchards and plantations in smoke at blossoming time is also worthy of more attention in this country, as it is easy to have heaps of rubbish in readiness, as frosts severe enough to injure fruit blossoms may usually be anticipated in time to start the fires. I have met with one English fruit grower who adopts this plan with satisfactory results.

The other great drawback to the production of good crops of fruit in the open air is, in my opinion, lack of moisture in the soil just before and after the trees flower. Many cultivators have noticed that during some seasons, although their trees have flowered at a time when they cannot have been injured by frost, yet for some mysterious reason either the flowers or young fruits have dropped, and the more I experiment the more I am convinced that the reason in such cases is lack of moisture at the roots. I do not for a moment think that I am alone in this opinion, as the value of watering wall trees just before they come into flower has often been advocated in the pages of the *Journal of Horticulture*, but how few cultivators ever think of watering Apple, Pear, and Plum trees grown in open positions? I am well aware that in too many gardens scarcity of water and labour makes such a course impossible, but there are others in which watering could be practised if it was found to be beneficial, and I am firmly convinced that nearly every season it would be so.

I have lately been experimenting with Plum trees of the same variety growing side by side; some were thoroughly watered just before the blossoms expanded, others received no water. The unwatered trees have set a fair crop of fruit, and on those which received water the crop is very much heavier, and the young fruits are swelling freely. In some very heavy soils watering might be an evil, but nearly all soils which are noted for fruit growing are naturally well drained, and frequently have an underlying strata of rock. At other seasons, too, water might be made to play an important part in the production of superior fruit. Frequently when the fruit is swelling, or approaching

maturity, the soil gets abnormally dry, with the result that it does not attain full size, and lacks colour and flavour. All cultivators know the wonderful results which may be obtained by watering and feeding throughout the season fruit trees grown under glass, and equally good results follow by pursuing the same practice with trees in the open air. I know of one grower for market who has a fruit plantation near his house. Two or three times during the season he manages to water the whole of the trees with liquid manure, and by so doing manages to secure such fine crops that he is continually pondering upon a scheme by which he hopes to water plantations further from home. Something may of course be done to conserve moisture by mulching, but if this is practised too early in the season it prevents the sun from warming the soil, and is therefore not to be commended. When June comes round, however, nearly all fruit trees are benefited by having a few inches of rough manure placed on the soil as far as the branches extend, and with trees worked on dwarfing stocks this is especially necessary. It seems to me that trees on such stocks will be largely planted in the future, and where this is done on a large scale a proper system of irrigation will be necessary. By such means exceptionally fine fruit will be grown, and the British grower may perhaps in time lessen the enormous importations of Apples which each year reach our shores. That we could, and should, grow them more largely, and at a fair profit, I have not yet met with anyone bold enough to dispute.—ONWARD.



NARCISSUS ROBERT BERKELEY.

See note on page 458.

The Cedars.

(Continued from page 392.)

When Brought to England.

IN this country the Cedar of Lebanon has been grown for over 200 years; the oldest tree is probably that at Enfield, in Middlesex, supposed to have been planted about 235 years ago. Several thousands are scattered up and down the country, chiefly in the midlands and southern counties; unfortunately it is liable to be uprooted by violent gales, as its hold upon the soil is slight. The Deodar, although introduced into this country only about seventy years ago, is much more plentiful than the Cedar of Lebanon; this was due to a scare at the Admiralty, more than fifty years ago, as to the insufficiency of a continuous supply of oak timber for naval construction; Deodar seeds were therefore introduced in considerable quantity, and gratuitously distributed to nurseries and private estates. But in later years it was found to be unsuitable for the purpose intended, and at the present day it is grown only for ornament. The African Cedar reached this country much later; the botanist Manetti found it in cultivation in the Imperial Gardens at Monza, near Milan, in the year 1844, but there are trees growing in this country which point to an earlier date than that, having been probably introduced by seeds from Algeria; and there is a much earlier reference to it in a letter from Evelyn to Pepys when the latter was at Tangier, in which, with Pliny's statement before him, he asks, "What sort of Cedar (if any) grows about that mountaine?"—Mount Atlas.

Curious Qualities.

The timber of the Indian and African Cedars is largely used for railway and constructive purposes in their native countries, as it is found to be very durable. The Deodar pillars of the great Shah Hamaden mosque in Cashmere are probably 500 years old, and to all appearance are still sound, whilst some of the bridges of Srinagar have timber of even greater antiquity, their piers having never been renewed, and this is the more remarkable, as they are alternately wet and dry. The imperishability of the timber is doubtless due to the resin which it holds, this oleo-resin being very volatile. In this connection Mr. Bailey remarked that the late Mr. Joseph Slidebotham

once had some cabinets made from new cedar wood in order to keep off insects; a collection of birds' eggs was transferred to one of these cabinets, and some months afterwards he was amazed to find the colourings of the eggs completely changed, as they had all been varnished by the deposition of the resin from the cedar wood. This resin also affects printers' ink; a bank-note was once presented at the Bank of England with the printed matter so smudged as to lead to its rejection. It puzzled the authorities for some time to account for its disreputable appearance, until their surgeon suggested, what afterwards proved to be the case, that it had been preserved in a cedar box.

Floral Decorations.

WHY do we not more often have our dining tables beautified with bright blossoms? asks Winona Leigh, in "American Gardening." It is so easy, I have found, if one only forms the habit of always having a plant, bouquet, or only two or three bright blossoms with plenty of foliage. The table will look so much more inviting, especially in the spring time, when our appetites need to be encouraged. True beauty is not always effected by using choice and expensive flowers. An especially pretty and dainty centrepiece, which will last for weeks, can be had by arranging several small plants or wild flowers on a shallow or deep glass dish, taking up enough of the mother earth so that the roots will not be injured, and press firmly together in mound shape, using the tall specimens for centre of dish. You will find the early Hepaticas, and all the Violets, swamp varieties being most desirable, particularly adapted for this idea. If given plenty of moisture the buds will unfold in a surprising manner. Have you ever used the deep pink and white Apple blossoms? If not, try them, for I know you will say, "How beautiful!"

Another lovely piece can be had by making an oval shape of any soft green moss on a shallow dish or plate; then place in the moss a liberal amount of fine green foliage from 2 to 4 inches in length, arranging the edge in fringe form, and it will be found that a very few blossoms will suffice to make a charming display. Nasturtiums, which can be purchased for a very small sum in July, I especially advise, their many tinted petals being especially appropriate and attractive for an orange luncheon or dinner. There are many other flowers which are well suited for this purpose, Pansies, Verbenas, small Roses, and many of the hardy shrub blooms being particularly beautiful. It will always be much more pleasant to have the decoration for the centre of the table rather low, that they may not interfere with one's view of others.

One of the daintiest arrangements of Roses can be had by using the common wild Sweet Brier, filling a deep, round, or oblong glass dish with generous sprays, using an abundance of their own delicate foliage. Grace and harmony of colour must never be overlooked. Try to have them look natural, never allowing more than three varieties or colours in the same vase or bouquet, using foliage freely. You will find that a few dainty grasses add very much to the artistic effect with some kinds of flowers. Birthdays, holidays, and Christmas, our tables can be beautifully decorated with the simple, graceful Vines, both wild and cultivated; also the many varieties of Ferns which are so easily procured. Small sprays of Japanese Honeysuckle, with their odd green and white foliage, laid about on a white damask cloth, are extremely pretty, and the common Honeysuckle, with its dainty cream and white blossoms, is always admired. Do not forget to gather the Ferns or any Vine used from two to four hours before the meal, keeping them in a cool, dark place, where they may take a good, full, drink of water, which will preserve them fresh for a long while.

Every spring I long for the glorious wild Cowslips, having found the low, small plants wonderfully attractive when arranged in a glass dish, as also suggested for Violets. Some tall large plants on my piazza were greatly admired for weeks last spring. If gathered early you will have buds opening every day. In November, when we have only hardy Chrysanthemums left for the table, remember to purchase from a florist one dozen sprays of English Ivy, about a foot in length, accepting only fresh new sprouts. Arrange them in a large-mouthed, deep glass vase, and you may have what I consider a very desirable bouquet for your dining table all winter. Very soon you will find roots developing, and the whole effect is most satisfactory. Always, for good health, put in the bottom of vase a piece of charcoal about the size of a large Walnut; do not change the water, but fill up when needed; in the spring time plant the Ivy by the house wall, an eastern exposure is best, and in a few years you will have an abundance for yourself and friends.—WINONA LEIGH.



Phalænopsis Schilleriana.

THE *Phalænopsis* as a genus, are Orchids that require considerable skilful attention to cultivate them successfully. *P. Schilleriana* is one of the most beautiful species of *Phalænopsis* known, both in foliage, which is attractively marbled, and flowers. Our illustration is of a plant that bore 1800 flowers at one time, at Chelsea. This was some years ago. The *Phalænopsis* require shady conditions and a warm, moist atmosphere.

Dendrobium Fytchianum.

The taste for showy flowered Orchids that make a good display has elbowed many of the small but pretty flowered species almost out of cultivation. *D. Fytchianum* is one of these, yet it is an interesting plant, and one that used to be thought a good deal of. The blossoms are pure white excepting a tuft of yellowish hairs on the lip. The species is found under cultivation to be specially attractive to thrips, but if the plant can be kept clear of these its culture is not at all difficult. Very small pots or pans must be used, and the house wherein it is grown must be hot and moist.

Miltonia Warscewiczii.

The blossoms of this species are very quaint and pretty, and it should be more popular. The spikes rise from the new bulb, and are large, carrying a number of flowers, the sepals and petals being reddish brown, with white or yellow tips. The lip has a purple blotch on a whitish or yellow ground, and the plants are now passing out of flower. Liking less sun and more heat than most *Miltonias*, it is usual to grow it in the East Indian house. The pots must be of medium size only, and the compost kept thin and open. Daily syringing in hot dry weather is advisable, but this must be discontinued when dull or wet weather ensues.

Dendrobium Victoria Regina.

This pretty *Dendrobium* does not, in most cases, appear very happy under cultivation, and the reason is, in many cases, that nothing is done to provide a hold for the roots of the small pseudo-bulbs as they are emitted. As many as possible should be brought in some way to touch the compost, and a flat block lightly dressed with moss gives a better surface for the purpose than the usual pot or basket. Checks from a fluctuating atmosphere are also injurious, and must be avoided. The flowers occur on few-flowered racemes, and the pale segments are prettily tipped with violet or purple.

Sobralia macrantha alba.

There are few more lovely albinos than this *Sobralia*, it being of very elegant shape and pure white, with the exception of a yellow stain in the centre of the lip, which greatly enhances its beauty. Unfortunately the flowers are at their best only for a day or so, but the quick succession produced from the same stem keeps up a display. It is not so tall as the typical *macrantha*—at least I have never seen it so tall—but is similar in growth and manner of flowering. It must have a sound compost of loam, peat, and moss, and plenty of water while growing.

Aërides Houlletianum.

This pretty species has never become common, and it is now seldom seen. I am in receipt of flowers from a Midland collection. In habit the plant is like *A. expansum*, but the leaves are narrower and the blossoms are smaller in the raceme and individually. In colour these are brownish yellow, with spots of purple on the sepals and petals, an unusual combination in this genus. Like many other of the *Aërides* it is worthy of more extended culture, for either in or out of bloom the plant is strictly ornamental, which many Orchids much more run after are not. *A. Houlletianum* is named after M. Houllet of the Jardin des Plantes. It flowered first of all in a French collection in 1868, and not until some eight years later in this country. A native of Cochin China, it delights in ample heat and moisture while making its growth, and those in charge of the plants

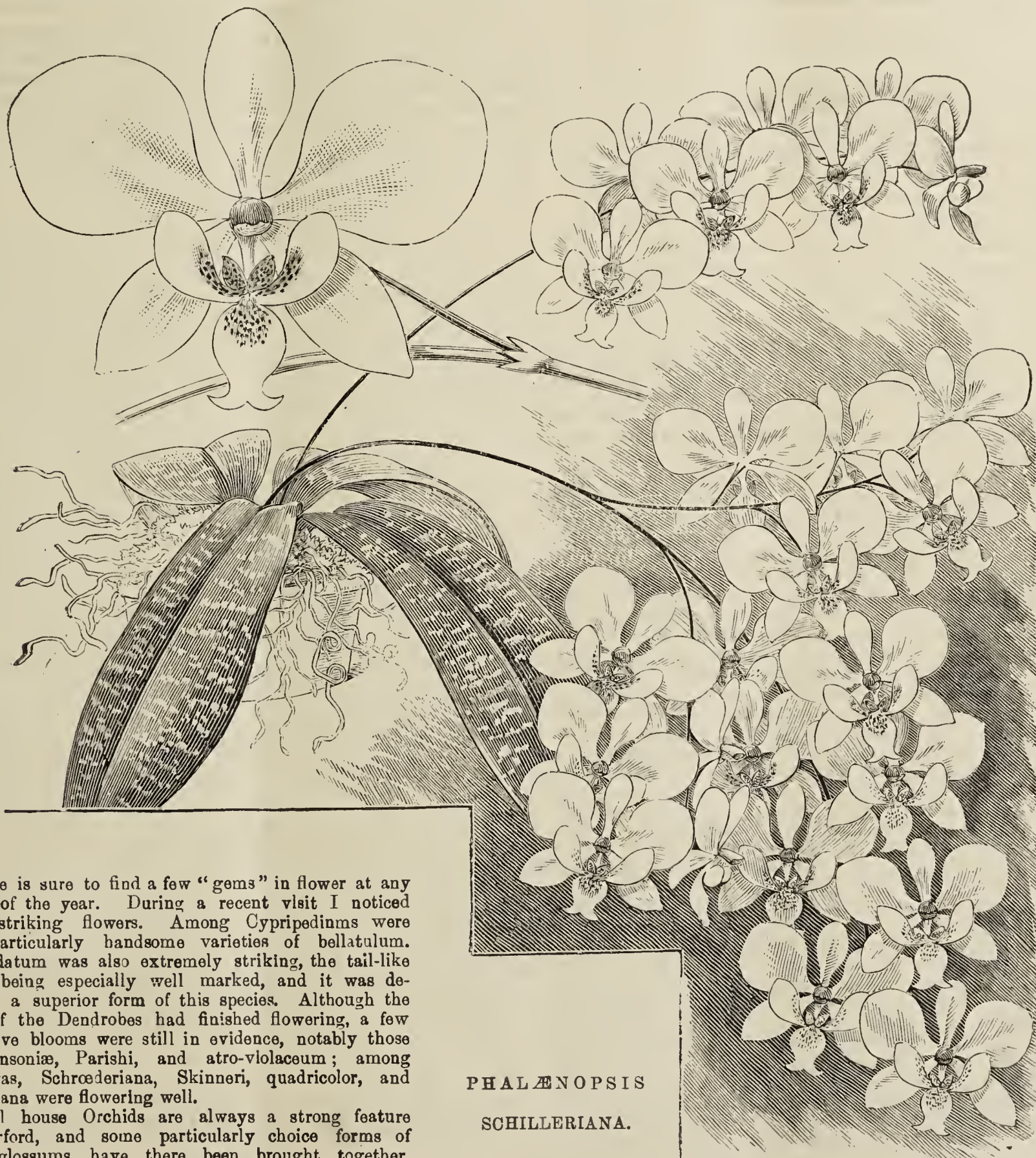
should keep a look out in autumn for the clouding over of the points of the roots, this being a sign that the plants are going to rest for the season. Less water must then be given, and more light admitted to consolidate the growth and prepare the plant for the winter rest. Clean sphagnum and charcoal is the best compost. —H. R. R.

Orchids at Barford Hill.

THE choice collection which C. A. Smith-Rylands, Esq., has gathered together at his Warwickshire home is always interesting,

Sander's Orchid Guide.

THE aim of Messrs. Sander's Orchid catalogue (which has now been issued, price 10s. 6d.) is to present a comprehensive and briefly descriptive list, arranged in alphabetical order, of the best, most useful, and showiest kinds of Orchids known in commerce. The descriptions are necessarily brief, but give the most conspicuous features of the flowers and plants, rendering them easily recognisable. The time of flowering, country of origin, methods of culture, and every particular has been rendered as complete as it is possible within the limits of a



and one is sure to find a few "gems" in flower at any season of the year. During a recent visit I noticed many striking flowers. Among Cypripediums were two particularly handsome varieties of bellatulum. C. caudatum was also extremely striking, the tail-like petals being especially well marked, and it was decidedly a superior form of this species. Although the bulk of the Dendrobies had finished flowering, a few attractive blooms were still in evidence, notably those of Bensoniæ, Parishii, and atro-violaceum; among Cattleyas, Schroederiana, Skinneri, quadricolor, and Veitchiana were flowering well.

Cool house Orchids are always a strong feature at Barford, and some particularly choice forms of Odontoglossums have there been brought together, foremost among them being O. excellens, a small plant in the best of health, worth at least 24 guineas. I was fortunate in seeing it in full beauty, and by reason of its quaint yellow groundwork and peculiar markings it stands out as an attractive novelty. In the same house there were still many flowers of Sophronitis coccinea and S. cernua; gems indeed they are for buttonhole work. Masdevallias were also flowering well, and several plants of Dendrobium infundibulum, grown on blocks, were simply smothered with blossoms. A valuable and distinct variety of Lælia grandis was also in full beauty. The whole collection was in a clean healthy condition, and being under the charge of so able a cultivator as Mr. R. Jones, it evidently increases in interest each year.—VISITOR.

PHALÆNOPSIS
SCHILLERIANA.

catalogue. The publication should be found useful to all Orchid specialists, or to those forming a collection. The Sanders have had a long and very extensive experience with this aristocratic order of plants, and the information given may be accepted as reliable and sufficiently embrative to suit the needs of any grower. The paper is good, and so is the printing and general plan of arrangement. Though running to 330 pages, the volume is light and not too bulky for an overcoat pocket.



National Rose Society.

ONE of the most interesting points in the relation of the forthcoming Rose season is, how will the National Rose Society fare? Its first exhibition will take place at Richmond, on Wednesday the 26th of June, in connection with the Richmond Horticultural Society. This Society has for many years enjoyed a season of prosperity, and last year invited the Royal Horticultural Society to hold a show there, and this year it invited the National. It is a charming situation, and being so close to the metropolis, ought to attract a good attendance of both exhibitors and visitors.

The Northern will be held in the far distant town of Ulverston, so that the provincial exhibitions will be as far north and as far south as they can well be; but the main interest will be concentrated on the metropolitan show, where, as we know, a real revolution has taken place. The change to the gardens of the Inner Temple has been enthusiastically welcomed by exhibitors of all degrees; they have no longer to look forward to the terrible journey to the Crystal Palace, for, at whichever station you arrived at, there was a tiresome and uphill journey to be made; there will be no occasion to calculate the time necessary to make the second journey from London to Sydenham, all will be on the level, and be plain sailing.

There is one pitfall to be avoided, and that is the underground railway; let exhibitors beware how they trust themselves to it and its gloomy recesses. Some of those who live near London will probably drive direct from their own homes to the Temple Gardens, but where they come by rail their better plan will be to drive from the station at which they arrive to the place of exhibition. The Society has issued a better schedule than it has ever before done, and the decorative aspect of the exhibition has been amply provided for. Vases, bowls and stands have been arranged for, while an opportunity will be given for showing what can be done in the way of table decorations. Special prizes will form a distinct feature; there will not merely be the trophies, but also Miss Willmot's prize for garden Roses, the Ben Cant Memorial prizes, and various minor ones offered by warm supporters of the Society. Of course one feature in the Metropolitan Exhibition is always regarded with keen interest—viz., the production of new varieties. There are not very many already announced, for although the foreign Roses are as usual plentiful enough, we have learned to discount their grand descriptions, and to regard them at their proper value, which I need hardly say is not that which their raisers accord to them; still, it is to be hoped that we may find in them something worth cultivating, especially in the Tea and decorative sections. We have had many beautiful flowers in that section, and perhaps Nabonnand may have something good in store for us.

Messrs. Paul & Son have exhibited lately some grand specimens of a new Hybrid Tea Rose Lady Battersea. It is a brilliant carmine red of large size and of good build, and likely to be a good exhibition Rose. Messrs. W. Paul & Son have three promising Teas, and Messrs. Alexander Dickson & Sons some good Roses from their Newtownards nursery, and from what I have heard from other quarters there are some which are likely, although not yet announced, to attract the attention of Rose growers. The Tea Rose Mrs. B. R. Cant is likely to be shown from Colchester. With these prospects before us we may well look hopefully forward to the forthcoming Rose season. There may be indeed "many a slip between the cup and the lip," but we may hope in the case of the National this proverb may not apply. One very happy circumstance in connection with the exhibition is that it will be so materially assisted by the staff of the Royal Horticultural Society. Mr. Wright, Chiswick Superintendent, who is so thoroughly up to the ins and outs of the Inner Temple, has been promised by the Council and Secretary to assist in carrying out all connected with the show, so that we may well hope all may go "merrily as a marriage bell," and the Benchers of the Inner Temple may rejoice in their generous help by opening their gardens to the Society, and may themselves enjoy the pleasure they have afforded so many thousands.—D., Deal.

Rose Liberty.

This lovely Rose should be noted by those who cultivate the grower for profit, as it possesses merits esteemed by the market flower. The colour is a nice clear shade of crimson. It is not a big

exhibition bloom, but quite large enough for purposes of sale. In the bud and half-open state it is the perfection of form, and full of quality in the petals. The plant is free and branching in growth, and certain in its habit of flowering. This Rose—a Hybrid Tea—will undoubtedly be largely grown in the future, and it is not the least valuable one that has come from the eminent raisers, A. Dickson and Sons, so famous as the producers of such charming Roses as Mrs. W. J. Grant, Bessie Brown, the Marchionesses of Downshire, Dufferin, and Londonderry, and others.

Tea Rose Mrs. B. R. Cant.

Those who saw this new flower last autumn were impressed with its beauty. It seems one that will be valued for general culture, apart from exhibition merely. The habit of the plant is most vigorous and branching, the sort, too, being a perpetual bloomer. Its colour, or shades, are a combination of bright salmon rose and buff, and the shape is handsome, both in the bud state and when fully out. It is sweetly scented. The foliage, again, is striking and ample, thus it should be an ideal Rose for massing.

Hybrid Tea Roses.

This section has become a favoured one, and there seems to be no limit to its improvement. But a few years back we had La France only, so that they are of recent origin. We are sometimes asked if Roses are better than they were a dozen years back. The stride made in this class alone would make us answer, Yes; yet in thinking of Roses of that period we do think the very dark Roses were better exhibited than they are now.

Who would not be fascinated by the remarkable beauty of that perfect flower Mrs. W. J. Grant, or fail to admire the wonderful petals of Marquise Litta? Lady Mary Fitzwilliam, and its sport White Lady, are among the most glorious of Roses, and it is a pity they are not easy to grow. Viscountess Folkestone, a flower not quite the form of a show bloom, is one of the finest of garden Roses.

It is in bloom the whole summer, and makes a fine head as a standard. Barlow Job is an almost single Rose, but the extra large petals, of a glowing crimson colour, make it a very attractive garden variety. Caroline Testout is almost a rival of La France as a salmon pink perpetual-flowering Rose. Gustave Regis, again, is a sort with few petals, but it is very showy in the garden.

The Hybrid Teas provide other handsome show kinds, such as Bessie Brown, creamy white, new and choice; Madame Cadeau Ramey, rose and yellow; Madame Eugène Boulet, salmon rose. These two last-named are not so well known as is Kaiserin Augusta Victoria, white with lemon shade, a charming show flower. Killarney, pale pink, has immense petals of fine substance; this will be valued for exhibition. Madame Abel Chatenay gives a charming shade of salmon rose; the blooms are not over-large, but very freely produced, and are good quite late in autumn. Augustine Guinoisseau, called the white La France, is scarcely white, but is a particularly good ever-blooming variety.

This type may not be pruned hard, and although they are mostly not rampant in growth, are yet vigorous enough to make showy specimens as bushes or standards. They succeed, too, on light soils, which are not found suitable for the rich, high-coloured Hybrid Perpetuals. Maybe in time vivid crimsons and reds will be forthcoming in this recent section of Roses. If so, they will be highly appreciated. Two strikingly fine single Roses in this class are Irish Glory and Irish Beauty, the former pink and the latter white. They are sweetly scented, and now that singles are becoming popular these new kinds are likely to be esteemed.—H. SHOESMITH.

Gardeners' Royal Benevolent Institution.

Annual Dinner.

It is unfortunate that the annual dinner of this beneficent Institution should annually be held at so early a date. Perhaps a week or two later would be better, as then the "London season" is nearer its height. However, the Institution still continues to do inestimably good work, and at the 62nd annual dinner, held on the first evening of the Temple Show—that is, Wednesday the 22nd inst, in the Whitehall Rooms, Hôtel Métropole, vigour and support were amply apparent. Lord Llangattock presided on this occasion. The Dean of Rochester was beside Lord Llangattock, and amongst other gentlemen present were the Earl Egerton of Tatton, Sir James Rankin, Mr. C. E. Keyser, Mr. Harry J. Veitch (Treasurer), Mr. A. Sutton, Mr. L. Sutton, and Mr. N. N. Sherwood. The chairman proposed the usual loyal toasts, and touchingly referred to the loss of our good Queen Victoria. The Institution has now the King, Queen Alexandra, and the Duke and Duchess of York as its patrons. It is sixty-two years since the

Gardeners' Royal Benevolent Institution was founded, its purpose being to succour aged and distressed gardeners of all sorts, and others engaged in horticulture. It has, during the long period of its existence, distributed £87,000 in charities. Annuities for life are now being given to 181 persons, of whom, as we have previously stated, ninety-eight are men, and eighty-three widows; these annually subtract £3288 from the funds. It is thus apparent that the Institution requires hearty and sustained support, if these poor forlorn old folks of the gardening craft are to be relieved, and the good work of charity strengthened and extended. A day's wages from each gardener in the United Kingdom would, as we have repeatedly urged, come as "a boon and a blessing" to many who are in the meantime debarred, though anxious to receive, some help from the funds of this Institution. We do hope gardeners may take the appeal into consideration. We do not know of any real ground or cause for criticism; and if there is none, why is it that the practical gardener does so little to help?

The only assured income of the charity is £900 a year, the remainder has to be raised by subscriptions and donations. The employers of gardeners, too, ought to know more than they do of the Institution, and without doubt their assistance would be assured. Much of the pleasure of the upper classes is derived from their gardens, and we are pleased to record the fact that this is thoroughly acknowledged by the aristocracy and gentry. The foregoing are a few of the statements and sentiments expressed in the speeches at the annual dinner. The function was well attended, and an excellent repast was furnished. The tables were gracefully decorated with seasonable flowers, with plants, and with fruits, all contributed by friends of the Institution. The proceedings were enhanced by well-rendered vocal and instrumental music. Mr. H. J. Veitch returned thanks to the address and appeal so ably made by Lord Llangatock, and referred with satisfaction to the fact that the Institution was prosperous even in the present unfavourable conditions for charities and societies depending on voluntary subscriptions. The venerable and revered Dean of Rochester most touchingly responded to Mr. Arthur Sutton's toast of "Gardeners' and Gardening," and Mr. N. N. Sherwood also spoke to the same toast.

We have received the following list of subscriptions from Mr. Ingram: Lord Llangatock, £100; ditto, for two blind candidates, £20; Messrs. Rothschild & Sons, £105; Baron Schröder, £50; Arthur W. Sutton, Esq., J.P., £100; Harry J. Veitch, Esq., £26 5s.; N. N. Sherwood, Esq., £25; ditto, £8 8s.; Leonard Sutton, Esq., £25; Worcester Auxiliary, per Messrs. J. Hill White and W. Crump, £82; John A. Laing, Esq., £28 7s.; W. Mackay, Esq., £20 14s.; Mr. Bailly Wadds, £14; T. Alfred H. Rivers, Esq., £18 18s.; W. Sams, Esq., £13 2s.; Mr. J. Lockyer, £13 13s.; Mr. J. Jennings, £15 15s. Subscriptions of 10 guineas each from Earl Egerton of Tatton, Lord Glenesk, Sir Trevor Lawrence, Bart., James H. Veitch, Esq., John G. Veitch, Esq., Charles E. Keyser, Esq., Messrs. Dicksons, Ltd., Messrs. H. & F. Sharpe, Anthony Waterer, Esq., Mr. W. Howe, Messrs. Barr & Sons, Thames Bank Iron Co., G. H. Richards, Esq., Messrs. Fisher, Son, & Sibray, Ltd., Mr. C. R. Fielder, £10; Mr. W. Murray, £11 3s.; Mr. A. Mackellar, £10; Messrs. Dickson & Robinson, £10; Mr. P. O. Knowles, £10 14s.; Mr. A. Porteous, £9 17s.; Mr. Peter Blair, £10; Richard Dean, Esq., £8 8s.; Mr. Geo. Norman, £6 11s.; Mr. E. F. Hazelton, £6 6s.; H. E. Milner, Esq., £6 6s.; Mr. J. C. McDoe, £7 7s.; Messrs. W. J. Jefferies and Son, £6 1s. Sums of 5 guineas came each from Mr. D. Inglis, W. Sherwood, Esq., Edward Sherwood, Esq., Mrs. J. W. Campbell, W. J. Nutting, Esq., Proprietors of the "Gardeners' Chronicle," Alfred Watkins, Esq., Ernest T. Cook, Esq., Messrs. R. & J. Cuthbert, H. J. Wimsett, Esq., Mr. Geo. H. Maycock, W. L. Corry, Esq., R. Sydenham, Esq., Messrs. Wills & Segar, Geo. Monro, Esq., Messrs. Wood & Son, Ltd., Proprietors of the "Garden," Messrs. Cutbush & Son, Messrs. J. T. Anderson & Son, the Dean of Rochester. The following others subscribe each £5:—Viscount Powerscourt, Sir James Rankin, Bart., M.P., Wm. J. Jefferies, Esq., David W. Thomson, Esq., Sir Oswald Mosley, Bart., F. W. Burbidge, Esq., M.A., H. E. Tillman, Esq., Mr. O. Roberts, James Sweet, Esq., ditto Good Samaritan Fund, Thomas Rochford, Esq., Joseph Rochford, Esq., ditto Good Samaritan Fund, Edmund Rochford, Esq., John Rochford, Esq., Peter Kay, Esq., W. Ponpart, Esq.; Edwin G. Monro, Esq., £6 6s.; Mr. T. Coomber, £4 12s. 6d.; Mr. M. Gleeson, £4 4s.; Mr. J. Woodward, £4; Mr. J. Markham, £4, and other smaller sums, making a total of £1761.

Australian "Big Trees."—America is in the habit of boasting of its big trees, but Australia would probably be awarded first prize in a competition between the two continents under this head. Has a church service ever been held in America in the hollow of a tree? That event recently took place in Gippsland, the eastern province of Victoria, where the Duke of Cornwall has had some shooting. A giant Eucalyptus, or "Gum Tree," had been cut through at a distance of 20 feet from the ground. The remaining part of the trunk was then hollowed out and roofed overhead. A room 25 feet in breadth was thus formed; it was found capable of accommodating a congregation of fifty. But it is not to be permanently used as a church. Its owner intends converting it into a creamery.



Dwarfing Chrysanthemums.

THE practice of cutting back tall strong plants of various free-blooming Japanese Chrysanthemums is an admirable method of obtaining dwarf compact plants, bearing one flower on each stem. The blooms will not be so fine as those from plants grown in the ordinary way, but still they are fine, and of value for cutting and decorating. Such plants are essential in a group for exhibition where a mixed collection of various sizes are employed, also for decorative groups in conservatories, as well as single specimens carrying several flowers. These plants, as it were, form an intermediate sized batch, coming as they do between very dwarf single stemmed plants and the tall naturally grown. The plants for cutting back should be well established in 6-inch pots at the time they are operated upon. Those that are well grown and furnished with leaves to the base ought to be chosen. Varieties that bloom late and are wanted to flower earlier must be cut down first, the midseason varieties next, and the early blooming sorts last. Specimens rather bare of leaves at the base are not suitable for cutting down very low, but may be shortened to 9 inches; others should be cut at 6 inches, and to obtain very dwarf and bushy specimens cut back to 3 inches. After the cutting back place the pots in a frame, which may be kept closed, giving no water, but afford daily syringings to encourage a fresh break of growths from the stems. Allow two, three, or four to grow from each, selecting those best placed, and rub out the others. An increased amount of air must be given the plants as soon as growth commences, water to the soil also being afforded more freely, maintaining a moist, but not saturated condition.

The next process is to repot into larger pots. This should be done as soon as the new growths have advanced to an inch in length. A compost consisting principally of loam, to which add one-third of leaf soil, the same of sweetened horse manure, and one-sixth part of broken oyster shells or crushed mortar, should be prepared. To one bushel of this compost add a 6-inch potful of soot, the same of bonemeal, a good sprinkling of burnt refuse, and insure porosity with sharp silver sand. Thoroughly mix, so as to incorporate the whole of these ingredients. It is advisable to prepare the compost when cutting down the plants, placing it in a heap and covering with mats. The shift given should be into 8 and 9-inch pots. Stand the pots closely together, and instead of giving water for several days, syringe the plants daily, a copious watering being required later when the roots commence to work freely. Place a light stake to each growth as a support against breaking or other injury. No topping will be necessary, but encourage the growth to extend until a bud shows in the centre, which will be from the middle to the end of August. Secure these, gradually rubbing off side shoots and other buds, then commence to feed with weak doses of liquid manure. If there is sufficient room in the pot to hold a top-dressing of soil this will be beneficial in encouraging new roots on the surface. Liquid made from various kinds of animal manure, such as cow, horse, or sheep droppings, and using alternately, is better than confining the applications to one kind only. Soot water may also be used; it is especially beneficial. Solutions of guano or of artificial manure may be used as a change of diet, alternating frequently with clear water, as it is not desirable to surfeit the plants, even with good things. Close attention must be given to the watering, for on this largely depends the health, cleanliness, and ultimate success in flowering.

As previously intimated, the tops of the plants, when cutting down, may be formed into cuttings in the ordinary way. Insert them singly in 2½-inch pots, and stand them in a frame on a moist base, keep close, and shaded from strong sun. In a short time roots will form, when air must be admitted in gradually increasing quantity until the plants can be fully exposed. By this time the pots will be full of roots, and a shift into a larger pot is necessary. The final size for these plants may be 6 inches. Grow them without stopping in any way, confining simply to one stem. The best attention must be given throughout the season, so as to retain the foliage down to the pots. As soon as the flowering pots are full of roots, commence to feed. Very useful plants, with fair sized blooms, are obtained, coming in convenient for many purposes.—E. D. S.

NOTES

NOTICES

Weather in London.—Save for one sharp shower on Sunday evening the weather in and around the metropolis has been ideal for the last six or eight days. The bright sunshine has been agreeably tempered with refreshing breezes. A shower of rain would assist young, newly made growth.

Weather in the North.—Excessive drought prevailed throughout the whole of the past week, but the much needed rain came during the night between Sunday and Monday, and a good deal fell during the latter day. Crops were beginning to suffer. Too much rain has not yet fallen.—B. D., *S. Perthshire*.

Destruction of Primroses.—Lord Avebury, speaking at the annual meeting of the Selborne Society on Friday night last week, expressed the fear that the wholesale destruction of Primroses and Cowslips, if not checked, would lead to their disappearance from the list of wild flowering plants in this country.

Runner Beans.—Here is a query for our calenderial writer to tackle:—"I see that in 'Work for the Week' you state, 'The advanced rows of Runners (Beans) should have tall stakes placed to them.' Do you hold that the old-fashioned and expensive plan of staking is better than the modern one of no stakes and pinching?"—W. R. RAILLEM.

Trials of Seeds Mixtures.—A very useful report on trials of seeds mixtures for hay and pasture, to which we have only space to refer, has been prepared at the Reading College, by Mr. Douglas A. Gilchrist, B.Sc., F.R.S.E., Director of the Agricultural Department. The report is not very extended, but contains records from Strathfieldsaye, Wolverton, Reading, &c.

Kew Gardens and Visitors.—We notice that our contemporary, "American Gardening," allows to pass a mistake which we corrected when it appeared in some of the American horticultural journals some months ago. An American visitor to this country has gone back, and prepared an essay, which was read before the Massachusetts Horticultural Society. Amongst other statements he, the essayist, announced "that from 60,000 to 80,000 people visited Kew Gardens during the season annually." As we before stated, 106,000 have been recorded on a single day. This was on a Bank Holiday some years ago.

A Remarkable Forestry Library.—This exists in Germany at the park of Wilhelmshöhe. It contains nearly 600 volumes, the work of one Carl Schiebdaoh, who died nearly 100 years ago. The volumes represent 120 genera and 445 species of trees, and each volume bears on the back the label of the name of the tree which it discusses, according to the Linnæan system. The volume consists of two boards; the upper board represents its tree in a young stage with a section of a young growth. Similar treatment is followed for the back board, only that it is representative of the tree at maturity. The "covers" are lightly polished and bear on them statements of the density of the wood, its properties, and a description and nature of the soil requirements.

Death of Mr. Frank Orchard.—The death is announced of Mr. Frank Orchard of Harbour Gardens, Bembridge. Deceased, up till about two years since, was last in the service as gardener to H. Michell, Esq., Undermonnt, Bonchurch, I.W., for some years. Previous to that he had been in the services of the late J. C. Fraser, Esq., Fleet Lees, Thorpe, Chertsey, and E. Barker, Esq., Abingdon Hall, Cambridge, being a very successful exhibitor of stove and greenhouse plants and Chrysanthemums. He had served severally in the gardens of the late Sir Henry Peek, Wimbledon House; Mr. Leach, Fallowfield; and Sir Chas. Lucas, Warnham Court, Horsham; and only a short time since took over the market gardens of his brother, Mr. C. Orchard. Deceased lost a little boy about a month since, and not being very well at the time, took cold at the graveside, which brought on erysipelas and a complication, to which he succumbed on the 22nd, at the early age of forty-four years, leaving a wife and five young children.

Cardiff Flower Show.—The Cardiff and County Horticultural Society have issued the schedule containing lists of the prizes to be competed for at the Society's show on July 17th and 18th. See advertisement, page ii.

National Dahlia Society — Important Meeting.—The committee will meet on Saturday, June 1st, at 2 P.M., at the Hotel Windsor, Victoria Street, S.W., in the rooms of the Horticultural Club. Attendance is earnestly requested.—J. F. HUDSON, *Hon. Sec.*

The Temple Show.—Messrs. Kelway & Son write to say that the medal awarded to them by the Council of the Royal Horticultural Society, on the occasion of the Temple Show, for tree Pæonies was a silver-gilt, not a silver Banksian medal, as previously reported. We published the official list, and in the hustle and bustle of a first show day mistakes will happen. * * Messrs. Sutton & Sons received a silver cup for general exhibit.

Bradford Chrysanthemum Show.—Large prizes are offered in the open classes for cut blooms and fruit at the above show to be held in November 15th and 16th. For twenty-four Japanese Chrysanthemum blooms (eighteen varieties), the first prize is £5 and a silver challenge cup value £10 10s. The hon. secretary is Mr. H. Spencer, Horton Park, Bradford.

Fossilised Conifers.—A contemporary reports that an interesting discovery has been made in the course of sinking the shaft for the Kent coal works at Dover, when a seam of fossilised Coniferæ was passed through. The seam followed the strata which contained bitumen. Some unusually large and beautiful specimens have been secured, and will be sent to the British Museum. In some cases the specimens secured show with remarkable distinctness the structure of the tree, with even the grain and the knots.

Azalea Show at Walton Lea.—It is evident that the kindness of Mr. John Crosfield, of Walton Lea, in allowing the public to view the fine show of flowers in his garden at Walton Lea is fully appreciated, as large crowds attended on Saturday and Sunday, during the time the grounds were thrown open to the public. On former occasions the show has been held on Sunday and Monday, but more people have been enabled to see the flowers owing to the change of dates. The show of Azaleas was the subject of much favourable comment, and they were much admired. Great praise is due to Mr. Kipps, the head gardener, who has evidently spared no pains to make the gardens as attractive as possible.

How to Grow Roses.—We have received the second edition of Mr. R. E. West's booklet (in lavender paper covers) entitled "Roses: How to Grow and Successfully Exhibit." Mr. West first began his work with Roses in 1884, since when he has been the winner of over 500 prizes. Rose culture has been his study and delight. He tells the reader of his booklet that he loves them, and more so the oftener he sees Roses, so that the axiom that "familiarity breeds contempt" will not stand good. He goes on to discuss the full cultural treatment of the regal flower, and gives advice on selecting a site for the border, preparing it, or beds; and on such matters as planting and pruning. What will be of as much use as anything to the beginner is the selected list of varieties drawn from all sections of Roses which Mr. West has prepared.

New Season's Fruit Consignments.—The first consignment of Almeria Grapes from South Australia reached the markets last week and fetched 1s. per lb. Cherries from the South of France were sold in large quantities at 8s. to 10s. the half bushel, and are being sold at 3d. per lb. from the costers' barrows; and Strawberries at anything from 1s. to 4s. a lb. Fine splendid fruit they were. Some fetched even lower prices, for shops were retailing them at 10d. per lb. Belgian Grapes came over in large quantities for the holiday market, and were remarkably good. They ranged from 2s. to 3s. per lb. Tasmanian Apples and Australian Pears are much in evidence. One firm alone sold 2500 boxes of Apples at 8s. to 10s. per box of 40 lbs., but only a few more cargoes are expected. Oranges also are nearly done, and are getting dear and unsatisfactory. The famous seedless Oranges have been fetching 18s. 6d. per box of 126. Bananas are plentiful and cheap. Pine Apples 1s. 6d. to 3s. 6d. apiece. Mangoes, Cranberries (from Canada), and green Figs, the latter at 3d. to 8d. each, were noticeable. Forced Peaches were cheap at 8s. a dozen, but the finer sorts cost 24s.

Appointment.—Mr. H. Naylor, for the past three years gardener at Piggott's Manor, Elstree, Herts, has been appointed gardener to J. M. Hughes, Esq., Harrow Weald Park, Middlesex.

Alcohol from Lichens.—Why could not *Cladonia rangiferina* and other starchy Lichens, such as grow in the far North, be utilised for the production of alcohol? They are said to be so employed in Scandinavia.—C. W. G.

Death of M. Joseph Vicat.—The decease of M. Joseph Vicat is announced. He was a tutor at Grenoble, and he it was who discovered the properties of the insecticide powder prepared from *Pyrethrum caucasicum*, now universally known.

Extensive Tree Felling.—Roumania's impecuniosity has led to the sacrifice of her peerless Oak forests. A contract has lately been entered into for the cutting of half a million Oaks under disastrous conditions. Every tree with the diameter of half a yard and above may be felled, the uniform price to be about 12s. per tree, and it is further laid down that the contractor is to exercise the option of rejecting one-fourth of the trees having only the minimum diameter of half a yard.

Horticultural Lectures at Thorne.—The first of a series of lectures on practical gardening arranged by the Thorne Technical Instruction Committee was held on May 11th in Mr. T. Gravell's orchard, Thorne. The lecturer was Mr. Thomas Reddington of the Yorkshire College, Leeds, who spoke to an encouraging attendance on the pests which infest fruit trees, and how to syringe orchards. Mr. Donkin, the secretary of the Technical Committee, announced that they had been successful in getting sanction from the West Riding County Council to have a series of five lectures on practical gardening, and to hold classes on poultry keeping and dairying in the autumn.

Moths as Food.—An article of food which is relished by the natives of the Philippine Islands is procured by collecting large quantities of moths from the rocks of the mountainous regions. The moths seem to mass in the crevices and hang there. The natives have not failed to discover the worth of the moth as a "dainty" of a sort, and they use the insects in large quantities; but they do not eat the wings or the heads; often the bodies are eaten with sugar or other articles of food. Again, they are used in conjunction with other mixtures in the form of pudding and prepared dishes. Cocoon cake and pie moth fillings are common.

Flowers for City Schools.—Recently the Liverpool Kyrle Society started a branch for the distribution of flowers to the children of the elementary schools in the poorer districts of the city. Friends in the country send boxes of wild and other flowers, and specimens of any natural object suitable for drawing and object lessons, and despatch their contributions at regular intervals during term-time. Amongst others, six industrial, and the "special" schools in Shaw Street for cripple and defective children, have been provided for. There have been more applications for flowers than country workers can supply. That the flowers have more than a purely educational purpose is testified by a teacher, who wrote: "Our school is amongst the poorest in the south end, but the children always seem so grateful that anyone should be interested in them, and, apart from the beauty value of the flowers, such a gift is helpful and useful."

"Cassell's Dictionary of Gardening."—Part i. of this remarkably cheap production (the price per part being 7d. net) has been offered to cultivators of plants. The dictionary does not cater for the scientist or dilettante, but merely for the cultivator. With this section of clientage it ought to find a ready demand. There is nothing original in the arrangement. The leading idea of the work has been to choose from the thousands of plants in cultivation all that are worthy of being grown. A few brief descriptive notes are furnished to each separate genus, and a short, select list of the best known species or varieties (but with meagre descriptions of their characters) is given. It is a matter for regret not to find the varieties more fully described. There are great numbers of illustrations. As with other works on gardening now being published, there is no scale given with the illustrations, and with a dictionary of this nature we should consider a scale to compare from, an absolute necessity. The printing, the clearness of the illustrations, and the quality of the paper are each exceedingly good. We think, however, that more cultural details are necessary if the work is to be of any material assistance to the ordinary gardener or cultivator.

Horticultural Club.—The usual monthly dinner and conversazione will take place on Tuesday, June 4th, at 6 P.M. The subject for conversation will be "The Annual Excursion." Committee meeting at 5.30: present position of the club; ballot for new members.

A Prolific Rose Tree.—Mr. F. J. Sheere, florist, of Taunton, Somerset, gathered from a white climbing *Niphetos* growing in his Rose house, from April 10th to May 9th, 1312 clean perfect buds; also off a *Reine Marie Henriette* 653, the colour of the latter being cherry carmine.

Variorum.—In his nurseries at Wick Mr. J. H. White has a Broccoli which at the end of last week measured 46 inches round. On Thursday it had increased to 51 inches, and was still growing. * * The report by the Principal of the School of Horticulture (Council of Agricultural Education, Victoria) for 1899, has only now been issued. The estate attached to the school comprises 40 acres, so that many interesting notes are recorded. These we must refer to at another time.

Fibre Cultivation.—The cultivation of fibre has been started in German East Africa with much promise of success, and the industry should be taken up in South Africa. An attempt was made some years ago in the eastern province of the Cape to utilise the fibre of the Aloe, but the machinery was not suitable and the funds gave out. In the East African settlement there are at present over 800,000 *Fouquieria gigantea* plants and 750,000 *Agave rigida*. Compared to other products, the cultivation of fibre is very simple and inexpensive. The only fear is that, owing to over-production, the price will fall considerably.

Harvest Weather Forecasts.—During the harvest season the Meteorological Council will supply forecasts of weather by telegraph, to persons desirous of receiving them, upon payment of the cost of the telegrams. The forecasts will be so worded that the cost of each message will be 6d. including an address of three words. If the address to which the forecasts are to be sent exceeds three words an addition of a halfpenny for each additional word must be made to the cost of the daily telegram. The special harvest forecasts are prepared at 3.30 P.M. daily (except Sundays), and are applicable to the twenty-four hours from midnight following the time of issue. Applications for the forecasts may be made on forms to be obtained of the secretary, which should be returned with a cheque or postal order for the cost of the telegrams for the period during which the forecasts are to be sent. In view of the importance of checking the accuracy of the harvest forecasts the Council will be glad to supply to those recipients who signify their willingness to co-operate in the matter, forms on which records of the weather experienced may be entered for the purpose of enabling the Council to compare the forecasts with the subsequent weather. The service of harvest forecasts is in addition to the ordinary service of daily forecasts prepared at the office at 11 A.M. and 8 P.M. Within these hours the latest forecasts can be obtained by telegraph upon payment at any post office of a fee of 6d. in addition to the cost of the inquiry and reply telegrams. By order of the Meteorological Council.—W. N. SHAW, Secretary, 63, Victoria Street, S.W., May, 1901.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901.										
May.										
Sunday .. 19	E.S.E.	deg. 59.4	deg. 53.5	deg. 69.0	deg. 41.8	Ins. —	deg. 54.5	deg. 53.0	deg. 51.0	deg. 35.0
Monday . 20	E.N.E.	55.7	49.2	61.2	43.9	—	55.5	53.4	51.0	35.0
Tuesday 21	E.N.E.	54.5	50.0	65.2	45.0	—	55.3	53.6	51.0	35.6
Wed'sday 22	E.N.E.	61.2	52.7	66.9	45.3	—	55.9	54.0	51.2	34.5
Thursday 23	E.	61.2	52.0	66.0	44.8	—	56.3	54.2	51.4	33.9
Friday .. 24	E.	62.7	53.0	70.2	46.1	—	56.8	54.5	51.6	37.1
Saturday 25	E.N.E.	62.4	54.8	68.8	46.3	—	57.5	54.8	51.8	34.0
MEANS ..		59.6	52.2	66.7	44.7	Total —	56.0	53.9	51.3	35.0

A week of bright sunny weather with cold drying winds. No rain has fallen since the 9th inst.

Hardy Rhododendrons.

FEW firms have done more for the advancement and improvement of hardy Rhododendrons than Messrs. J. Waterer & Sons of Bagshot, whose groups at the Temple Show and other exhibitions are always a chief feature. The illustration on this page represents the group this firm arranged in the Inner Temple Gardens last week. Hardy Rhododendrons are undoubtedly the finest and best of hardy evergreens, and at this season of the year a massive group, collection, or dell of Rhododendrons in full flower, is sufficient to cause the least appreciative among us to pause and bestow admiration upon them. The Rose Bay, as these plants are popularly named, succeeds best in cool, moist, peaty dells, fairly well exposed to the sun, wind, and rain. The position ought to be in a manner sheltered and not too naked to the cold, flouting breezes. However, our remarks are not intended to be cultural, but rather to point out to those living, perhaps, far from where the Bagshot and other superb collections can be easily seen, that each year discovers some new varieties, and that these novelties are frequently decided acquisitions. It would be well, therefore, if provincial gardeners could be persuaded to add even a few of the

Fitzwilliam or R. Fosterianum, combined with all the size, purity, and attractiveness of R. Griffithianum, R. Countess of Haddington, R. Dalhouseianum, and others.

Hippeastrums.

LILIES, because of their hardiness and superior æstheticness of form and habit of flower and growth, are popular with thousands of our fellows. Hippeastrums are not Liliums, nor of the Lily order, but in general floral resemblance they closely approach some of the stately species and varieties of the near relations to whom we have just compared them. Were they so easily grown—that is, were they fit to stand the rigours and vicissitudes of our British climate—it would not be long ere the stately and gloriously coloured Equestrian Stars (as they are also called) would be found, even in cottage gardens.

As it is they must have the warmth of at least an "intermediate house"—a plant house with a temperature between 60° and



A VARIED GROUP OF HARDY RHODODENDRONS.

most improved sorts to their collections. In this way others would see their worth by inspection and comparison, and before long many of our gardens would be all the brighter and better from the selections thus included.

The great bulk of hardy Rhododendrons are crimson, of shades of this and nearly related colours. We see here how the earliest Himalayan species have thus had a very telling effect in the progeny that has been derived from them by hybridising and crossing. The old *R. ponticum*, which first entered our English soil from India in 1763, is lavender purple, and many of the best present-day favourites have much of lavender, or lilac and lilac purple, not to say violet, in them. It has been principally to the well-known *R. arboreum*, however (introduced in 1820), that we have derived so many fine crimson and pink varieties of hardy Rhododendrons. The latter species is not quite dependable in point of hardiness in our isles, but its descendants, by the process of naturalisation and their relationship to hardier species, are quite frost-resistive. *R. catawbiense* and *R. caucasicum* have been important species in hybridisation.

Now that such delightful and exquisitely beautiful varieties as Pink Beauty, Kewense, Mrs. Tom Agnew, Lady Eleanor Cathcart, Picturatum, and others have rewarded the skill, attention, and thought of the specialist, we may expect much further advances. Already the more tender species are having their refined superiority transmitted to the outdoor varieties, and if thought and patience are both exercised we may have the fragrance of *R. Lady Alice*

70° in winter. Of course they last fresh and do better in an ordinary cool greenhouse or conservatory when their imposing spikes have developed and the flower buds have expanded. Nearly all who have the means of accommodation for their growth include a group or collection of Hippeastrums (lately named *Amaryllis*) with their other plant subjects. We have enthusiasts, however, who extensively cultivate this genus of Amaryllidaceous plants, and amongst these none are more consistent or satisfy themselves more thoroughly with the varied beauty and interest of these plants than Captain Holford, whose gardener, Mr. A. Chapman, has such a splendid collection under his care at Westonbirt, Tetbury.

Captain Holford was the earliest exhibitor of a collection of Hippeastrums at any of the Drill Hall meetings of the Royal Horticultural Society this season, and he was the last also, for even at the show held in the Inner Temple Gardens last week his plants were in evidence. We are pleased to reproduce a photographic illustration of the Westonbirt plants, whose brilliant flowers were relieved by a soft green foil furnished by Ferns and other foliage plants. Sufficient was written descriptive of the group in last week's Journal to give our readers an idea of the new and improved varieties it contained. One received an award of merit; but all were of true form, large, of good substance and colour. Mr. Chapman, we believe, adopts the system of plunging his pots of bulbs in tan beds while they are making their growth during summer. Hippeastrums deserve all the attention the most enthusiastic can bestow upon them.

Malmaison Carnations.

EACH year the lovers and growers of these popular flowers increase in number, and many, who have had no previous experience in their culture, find that by following the directions given in the horticultural press they are able to grow Malmaisons successfully. When failures do occur they may often be traced to over-anxiety on the part of the cultivator, which leads to the belief that it is necessary to be ever ministering to the wants of their plants; such cultivators are tempted to overwater, which is a fruitful cause of disaster. The time has, however, now arrived when a little extra attention is necessary to maintain Malmaison Carnations of all types in a vigorous condition. Early batches are already beginning to unfold their flowers, and later ones are showing their flower buds. Plants which have received good attention are usually pretty active at the root by the time the flower stems are visible, and I find that is a suitable stage at

to watering, the oft-repeated advice of testing each pot by rapping is, as a rule, the only safe method to follow, although there are times during very bright weather when the experienced cultivator can tell at a glance whether or not water is required. When the soil is permeated with roots the plants quickly receive a check if the soil is allowed to become too dry; on the other hand, when water is too frequently given, the roots quickly decay and the plants die off at the collar. In the case of weakly plants it is always better to err on the side of giving too little than too much water. During bright weather the stages and floors of the house should be damped several times daily, and I find it an advantage to occasionally syringe the plants also, sometimes using clarified soot water for the purpose.

All houses in which Malmaisons are grown should, where possible, be provided with roller blinds, so that shading may be practised for a few hours daily when bright weather prevails. Failing such a convenience, the glass ought to be coated with some kind of shading, as the flowers never develop high colour when exposed to full sunshine. In establishments where the convenience of a house having



A GROUP OF CAPTAIN HOLFORD'S HIPPEASTRUMS.

which to begin to feed. I am a firm believer in the effectiveness of weak solutions of soot water, and commence by using it at each watering for a few days until the whole of the plants have received an application, then it is withheld for a week or ten days, and its use again commenced.

From the time the flower buds are visible till the flowers are about half opened, Clay's fertiliser applied once a fortnight greatly benefits the plants. The leaves assume a deep green colour, and the vigour of the whole plant seems to increase under such treatment, provided it is not applied in larger quantities than those given in the directions enclosed in each package. In applying this manure care should be taken not to let it come in contact with the stems of the plants, or subsequently some of them may die in a mysterious manner. I find it an excellent plan to use Clay's as a top-dressing after the plants have been watered, but as they do not often all require watering at the same time, I make a practice of damping the surface of the soil with a syringe in the case of those plants not recently watered.

Under the best of management the soil sometimes gets close and "slimy" on the surface, and the time-honoured practice of stirring or scraping it off with a label is labour well spent, as plants so treated seem at once to assume a particularly happy appearance. In regard

a north aspect exists, if the plants can be removed to it when the flowers are almost half opened, the position will be found an ideal one for them, from that stage onward till the blooms have been cut.

In districts where the plants suffer from the attacks of eelworms, burning the soil used for potting is usually an effectual remedy. When the soil has not been burned, and an attack is noticed, Little's soluble phenyle, applied at the rate of 1 fluid oz. to 10 gallons of water, will check the spread of the pest, and in some cases completely eradicate it. Rust or spot, a troublesome fungoid disease, frequently disfigures the plants, and weakens their constitution during hot weather. Syringing the foliage with Bordeaux mixture, in the early stages of the attack, and repeating the application a week later, is generally effectual.

In addition to the above cultural practices, that of giving abundance of air at this season is of vital importance. A free circulation of air at night (except when sharp frosts are likely to occur) helps greatly to maintain the plants in vigorous health, and, on the other hand, a stuffy atmosphere is detrimental to the health of all kinds of Carnations. Green flies ought not to give much trouble, as we have now such splendid methods of destroying them within our reach, and our motto in this respect should be fumigate when the first trace of insect life is visible.—H. D.



Tetralthea hirsuta.—An exceedingly showy greenhouse plant with shoots laden thickly with rosy mauve pendent flowers. It is suitable for greenhouse decoration in spring, and may be treated in all respects as *Boronia*s are. Messrs. Veitch showed a basketful of plants of this subject at a recent Drill Hall meeting. The *Tetraltheas* represent a genus of Australian evergreens. An illustration of *T. hirsuta* is furnished on page 461.

Linaria.—*Linaria* is a genus very closely related in its characters to *Antirrhinum*, but having a distinct spur at the base of the corolla. *L. vulgaris*, the common Toadflax, is common on hedge banks and borders of fields; and *L. Cymbalaria*, the Ivy-leaved Toadflax, although not British, is thoroughly established on old walls in many places. The latter is also a favourite window plant, and is remarkable for the manner in which its petals become reflexed after flowering, and press their ripening capsules into the crevices of walls, &c.

The Gorgeous Tropæolums.—The following are named *Tropæolums*, and no garden should be without great masses of this showy, annual genus. Tom Thumb section:—*Empress of India*, glowing crimson; *Prince Henry*, deep crimson, very rich; *Chamæleon*, glowing orange, chocolate spotted throat; *Cloth of Gold*, golden; *Ruby King*, ruby rose; *Golden King*, rich golden yellow; and *Beauty*, a soft buff colour. There are also *T. Lobbi fulgens*, brilliant crimson scarlet; *T. King Theodore*, deep claret red; and *T. Lobbi Brilliant*, a glowing crimson scarlet.

The Nasturtiums.—The *Nasturtiums* have the advantage over very many other annuals. They are amongst the best of all plants to grow and bloom in light soil and warm, dry, sunny banks, and, as you wish to secure flowers in such a position, you cannot plant anything better than them. If you dig the soil and add some manure to it at once, and sow the seed at the middle of April, they will be in bloom at the end of June, and make a fine display till the end of summer. Make holes 8 inches apart and 2 inches deep all over the surface of the beds. Drop a seed in each. This is all the attention they require. There are some self-coloured varieties as well as mixed shades, and they are capable of making a more bright and interesting display than those not familiar with them know of. Being low growing they are also well adapted for windy positions.

Quassine.—This is the latest development of this useful garden insecticide, which in modern times has been looked upon as an indispensable sundry for the store. By the use of quassia the fruit grower is enabled to deal with a formidable enemy—black fly—which attack *Cherries* so vigorously, also *Plum* and *Peach* aphids and other soft-skinned insects. Under glass, too, there is a similar use for dealing quickly and economically with small insect colonies, and particularly in houses of large size not permitting of fumigating. Quassine is a most highly concentrated form of *Quassia bark*; so much so, that a small phial containing about two tablespoonfuls is estimated by the vendors, Messrs. Thos. Christy & Co., as being sufficient for 20 gallons of water. Repeated trials, however, prove that for thrips and *Cherry fly* it must be made stronger than this to be effectual. The great feature of quassine is its portability; the 20 gallon dose can easily be carried in the waistcoat pocket—a strong recommendation in its favour. The use of quassia in any extracted form renders the foliage of plants or trees bitter and unpalatable to insects, and thus by its use insect attack can to some extent be held in suspense, and by repeated applications destroyed when in evidence. We found that the *Turnip fly*—such a terror to the gardener always—quitted the seed beds at once when lightly sprayed over with diluted quassine, after other measures failed. This preparation is easily and quickly soluble in warm water to which soft soap is added. Only sufficient warm water is needed to dissolve the quassine and soap, it can then be added to cold water up to the prescribed quantity. The moderate cost, together with the highly concentrated nature of quassine, should make it easily accessible to the large body of fruit, plant, and vegetable growers dependant on insecticides throughout Greater Britain.

Berlin's Gardens.—A new municipal budget shows that 300 streets in Berlin are planted with 44,000 trees, which represent a value of £38,000. The care of the municipal parks and gardens requires 230 gardeners, with 700 assistants, male and female, principally the latter.

Common Foxglove.—It may come as a surprise to some to know that the common Foxglove, *Digitalis purpurea*, so abundant in Britain, except in limestone districts, is an important medicinal plant. It is, however, extremely poisonous, the roots, leaves, and seeds containing a powerfully poisonous bitter principle, called digitalin, to which its medicinal properties are due.

Schooled to be Gardeners.—At Lea School, the birthplace of Florence Nightingale, cottage gardening is taught from Standard IV. upwards with great success. A quarter of an acre was given to the school by Mrs. Shore Nightingale ten or twelve years ago. The boys do all the work on it, growing Potatoes, fruit, and flowers, and take its produce. There is to be an autumn show, patronised by the Duke of Devonshire.

Narcissus Robert Berkeley.—This is a handsome variety of *Narcissus*, which closely resembles the form of *incomparabilis* Sir Watkin. Miss Willmott of Warley Place, Great Warley, received a first-class certificate for it on April 23rd, when flowers appeared before the *Narcissus* Committee in the Drill Hall, Westminster. The broad segments are white, and the well spread crown (corona) pure yellow. We furnish an illustration on page 449.

Trees for Sable Island.—The Government has sent Professor Saunders to Sable Island to carry out a scheme for covering its sandy wastes with vegetation. Sable Island lies at the entrance of the St. Lawrence, and is a graveyard of shipping. It lies so low that it is practically indistinguishable in any but clear weather; and it is hoped by covering it with trees to make it more conspicuous to mariners. Large shipments of evergreen trees have been sent from Halifax, says the "Daily Express," and Professor Saunders will be given every aid in his work.

Schoolboy Gardeners.—Gardening is encouraged in some of the schools under the Norwich School Board. At Nelson Street school the vegetable gardens cultivated by the scholars have yielded a profit on the year's working, £9 having been realised by sale of produce. A portion of the Chapel Field Park has now been granted by the Corporation to furnish a flower garden for another school, and the boys are hard at work at their own heds. These plots will include a botanical garden, and the trees in the park will also be labelled for educational purposes. The lads work under a syllabus approved by the Education Department, and they will earn a grant.

Gooseberries.—Chemically this fruit contains citric acid, pectose-gum, sugar, cellulose, albumen, mineral matter, and water. The quantity of flesh formers is small. The pectose when heated makes a capital jelly. Mr. Broadbent states that the young leaves of the Gooseberry plant used as salads are good for gravel. The red Gooseberry furnishes an excellent jelly, most beneficial for plethoric and bilious subjects. Gooseberry fool, so acceptable in early summer, is made from the unripe fruit, which is stewed, then crusted, sugar and cream being added. The juice of the unripe fruit is excellent for inflammatory conditions of the blood; and as a spring medicine the Gooseberry is much more valuable than *Rhubarb*. The Gooseberry is more readily grown in Britain than anywhere else, owing to our moist climate.

Early Strawberries.—Strawberries from Plougastel, six miles from Brest, have already made their appearance on the Brest market, and the service between Plougastel and Plymouth commenced on May 24th, Green Peas and other early delicacies also being carried. Last year there were exported from Plougastel to Plymouth 2375 tons of Strawberries, and over 400 tons of Peas. One day last week Strawberries were sold at Plougastel at 1s. 3d. per lb., and the next day at 10d. Two vessels will be engaged in the trade, so as to permit of a cargo of early Strawberries, &c., being landed at Plymouth regularly each day. Special trains will be requisitioned to convey the consignments of fruit to the North and Midlands with the least possible delay. The season usually extends over a period of about six weeks, but in all probability it will only last about a month this year. This is due to the fact that unfavourable weather retarded the growth and ripening of the fruit, which was on the markets quite a fortnight earlier last year.



Grape Gros Maroc.

IN answer to your correspondent "R. M.," page 395, *re* the above named Grape, I may say that my experience entirely coincides with his respecting Gros Maroc. I have a young Vine of it, planted in an inside border, which is very healthy and strong, and ought to be carrying eight or ten bunches, but it has only produced three this time, and the same may be said of its behaviour last year. There is certainly one strong point in its favour, and that is its very handsome appearance, being almost blue-black with a heavy bloom on the berries. It comes in very useful to an exhibitor when he is staging a large collection of Grapes, being very pleasing to the eye, but to the palate it is very different, the flesh being coarse and flavourless, with very little sugar in it; therefore I should say that for the majority of Grape growers it is not worth growing.—R. MORSE.

A Problem in Heating Solved.

THE adoption of the plan described by "H. D.," on page 378, is certainly an improvement on many such troublesome schemes for overcoming the difficulty of passing below the floor from one side of a house to the other. Too many gardeners know from experience gained somewhere during their probationary days what such "dips" in the hot-water pipes mean, especially when the boiler power is inadequate. Some two years since, however, I saw this course adopted in heating a church, and though I doubted the wisdom of the engineer at the time, I have since found that no difficulty has ever been experienced in getting the heat to pass from one side to the other. Air taps were fixed at the two points where the pipes dip and rise from below the path on either side of the door. Although I have watched the progress of the case under notice, and see that, in this instance at any rate, it works perfectly, I should still hesitate to adopt it unless circumstances rendered it imperatively necessary. A self-acting air pipe would be preferable to taps where these can be applied, as with these no air accumulates to obstruct the passage of the water. Those who have pipes so constructed, and have found the circulation defective, would no doubt find an air outlet, fixed at the positions indicated above, remove the uncertainty, no matter how long standing it may be, and the cost of doing this certainly would be little compared to the trouble and risk involved in bad weather.—W. S.

Royal Horticultural Society of Ireland.

I HAVE read the interesting comments of your correspondent Edw. Harland, on page 351, *re* the cause of my dispute with the above Society. If this discussion is to be impartial, I fail to see how it can be so without a knowledge of the rules which I quoted, and I herewith enclose, for the Editor's acceptance, the copy of the Society's annual report, containing the twenty-one rules and eighteen bye-laws under which I made the entries. The fact that the entries were accepted through my agency is an indisputable proof that they recognised that agency, therefore the executive were as directly responsible to me as I was to my employer, and my acknowledgement to them that I received the awards should have been sufficient to free them from any further responsibility they had to him. There was no other form under which I could compete without putting my employer's name on the entry form. As a practical member I maintain that I was perfectly justified in making the entries in the manner I did.

I have never disputed the question, but I consider that employers are as justly entitled to all prizes won with their property as they are to money derived from the sale of the produce of their gardens, providing of course that they pay all expenses incurred by exhibiting, and that no agreement or understanding exists to the contrary. Personally I do not consider it is a debatable question. The very courteous letters of the secretary go to show that the Society has no rule whereby they could defend the action of the Finance Committee. The only defence is that I put my employer's name on the entry form, and a reference to the fact "that the executive have been repeatedly brought to task over paying prize money direct to gardeners, and ignoring the exhibitors in whose names the entries were made." Such untrustworthy men as the above statement indicates must surely belong to that class of gardeners which I have read about in a contemporary ("The Irish Gardener"), and whose services can be had in co. Dublin for 15s. per week, with a barrowful of coal as a perquisite. Doubtless such gardeners have never known what it is to have the privilege of free-will action, or power of agency to buy even an ounce of Cabbage seed.

Referring to the very able criticisms of "W. R. Raillem," on page 373, I must say that in the face of the standing rules and bye-laws

of the Society his argument falls to the ground. There is no stipulation in the schedule that the exhibitor must be the *bonâ fide* owner; the nearest approach to it is that the subjects of the exhibits must be in his possession at least two months previous to being exhibited. There may be something humorously Irish to record in the presenting of the medal. I have not yet learned whether it is from lack of metal that it has not yet been sent.—PETER BROCK, *The Gardens, Glenmor, Drogheda.*

Rove Beetles.

I FEEL I must write a word in defence of an old friend, unintentionally (no doubt) libelled in the Journal (page 444). The statement is that the "Devil's Coach-horse" arches up his hindquarters when disturbed or annoyed, and that this is "done to fear." My recollections of the creature, nearly fifty years ago, when I was more familiar with it, are that he was utterly innocent of fear of anything, animate or inanimate. At that time I was at school, and among my schoolfellows was a boy who, though he certainly had the cruel instincts of primitive man, ought to have turned out a distinguished naturalist. He would bring home alive and unhurt in his hands any insect, however noxious or venomous—wasps, bees, spiders, anything—and I am sorry to say they were captured for the same reason that the wild beasts were brought to Rome—to make them fight with each other. I can remember seeing several of these displays of gladiatorial combat under a glass shade; and of all "beggars to fight," the "Devil," as we affectionately called him, was *facile princeps*. We had no hornets, as they were rare in that neighbourhood; and the largest species of humble bee was the only creature we could find who could make any show against the "Devil." His weight and wings helped him, and if he could get his sting between the joints of the "Devil's" armour the thrust would be mortal; but by that time the two terrible sickles of the "Devil's" jaws would have met somewhere, and if that spot happened to be the bees' thorax, he would die too. Spiders of the largest size, and queen wasps, were but as mincemeat for those dreadful jaws; and the point I am writing about is that some of the creatures "didn't want to fight," but had to if a "Devil" was the opponent; he would cock his tail at once, and anything that came within reach was immediately seized. As a remembrance of the time when our cruel little schoolboy souls were pleased with these deadly duels, I must protest against the statement that the rove beetle turns up its tail through fear, or that he means it the least to signify "turn tail."—W. R. RAILLEM.

A Schedule Blunder.

MR. CRUMP gives a very clear and tangible reason for the exclusion of this most fickle Grape from the Shrewsbury schedule; at any rate, in the class to which Mr. Iggulden's letter referred. There is no injustice to any would-be exhibitor in the exclusion of a Grape so rarely seen in a perfect state, and as Mr. Crump remarks, there is plenty of variety from which to choose without permitting two white Muscat varieties. When one read so much in praise of the Shrewsbury Shows, it came somewhat as a surprise when, on page 366, Mr. Iggulden found a cause for complaint. I think, however, that Mr. Crump's version of the matter sets the case at rest, and the supposed blunder resolves itself into no blunder at all.—W.

COMPARED with the vivacious up-to-date Mr. Crump, I must admit being somewhat lethargic and old-fashioned in my ideas, and that, too, in spite of the fact that the last few years has been the busiest period (horticulturally speaking) in my career. That a blunder was made by the framers of the Shrewsbury schedule I, in my stupidity, still maintain; and further, that in Mr. Crump they have a champion who has not mended matters, but, on the contrary, has made a worse muddle. He has quite overlooked the fact that there are black as well as white Muscats, or else what does he mean when he expresses the opinion "it was deliberately and accurately considered that any one of the Muscat tribe was ample" for admission in this particular class? For the purposes of schedules Madresfield Court is classed as a Muscat-flavoured Grape, and is shown as such admirably in this district. Is there any clause I, in my density, have overlooked, which hinders, say, Mr. Goodacre from showing both Muscat Hamburg and Madresfield Court in the great Grape class at Shrewsbury? or would another grower I could mention, who has had Mrs. Pince Black Muscat beautifully coloured by the middle of August, be disqualified if he exhibited this and the other two black Muscats in the Shrewsbury class? I think not; yet Canon Hall is one of the most distinct varieties in cultivation, and at its best second to none, is shut out to let in, according to the apologist for the blunder, I presume, Buckland Sweetwater, Foster's Seedling, Gros Maroc, Alnwick Seedling, and such like favourites with the modern gardener. Why not admit a blunder was made? or, if this goes against the grain, give some better reasons for excluding Canon Hall Muscat when Muscat of Alexandria is also shown? The class for twelve bunches of Grapes is regarded by the majority of gardeners as the most important in the Shrewsbury schedule, and winning numerous prizes in other classes would not compensate for being beaten in the "champion" class.—W. IGGULDEN.

Pear Bergamotte Esperen.

WILL you, Mr. Editor, spare me a short space to add my mite of panegyric to those well-known experts in Pear culture, Messrs. Diver and Young, as to the high merits of Bergamotte Esperen? I am well aware it is but "painting the Lily and adorning the Rose," in vulgar parlance "buttering parsnips," to intrude further on the notice of your readers, but scientific authorities are not unfrequently given to be orotchetty; in a word, do not care to be convinced. And, really, the failure of this excellent Pear under consideration to obtain a certificate would seem to be a case in point. I have grown Bergamotte Esperen for over forty years, both as a wall cordon and as an orchard standard grafted on perry Pear trees. Under both styles of treatment it succeeds admirably, and is most useful and reliable against a wall, for its large size, and, as a standard, for its keeping properties; indeed, *Nec Plus Meuris* is the only very late Pear that with me at all comes up to this variety (I can make nothing of *Olivier des Serres*), and utterly fails in the competition, from its want of texture and poorness of flavour, which is decidedly of the Turnip, "turnipy." I well remember Bergamotte Esperen at Holm Laoy before Mr. Young succeeded to his excellent predecessor—old Wells—when the celebrated cordon wall was in the zenith of its reputation, and that the late Earl of Chesterfield (who was no mean authority on Pear culture from his long sojourn in France), as well as his gardener, had the highest opinion of this variety. Blackmore, certainly, speaks disparagingly of it; but does not this celebrated author of fiction condemn, or damn with faint praise, almost every one of the finest varieties grown, for some reason or other, as more or less worthless at Teddington? Dr. Hogg, in his description in the "Fruit Manual" (as given in full by Mr. Young) speaks most highly of Bergamotte Esperen as "a fit successor to *Winter Nelis*." I have always found this so; and another instance, if wanted, of the marvellous accuracy—even in the most minute details—of this invaluable standard work, the practical value of which, to the fruit grower, embryo or expert, every year enhances.

I should like to take this opportunity to recommend a midseason Pear, *Baronne de Mello*, not so much known and grown surely as its sterling merits deserve; it absolutely bears out the description given of it in the fruit catalogues and the "Manual." It is as good in flavour as *Beurré Superfin*, but much hardier and more prolific, with a thick, rough skin, and never a rotten core, while the flavour is exquisite. It never misses bearing with me, at least on a S.W. cordon wall, and at any rate in our warm Herefordshire soil succeeds well as a bush or pyramid. I have never tried it as a standard.—HEREFORDSHIRE INCUMBENT.

The Land and its Culture.

I WAS much interested in "H. D.'s" article of the 16th, under the above heading. Having been born on the land and connected with it all my life, I have watched with the deepest concern the rapid emigration from the hills around me—viz., the Cotswolds. What are the reasons of this wholesale depopulation of agricultural districts? There are several. In the first place a love of excitement, which can only be obtained in large towns, low wages on the farm, high wages in the towns, and, as "H. D." says, the long hours on the land, as against shorter hours in the towns, and the dreadful monotony of farm life.

Then it is evident that the cheap weekly excursions provided by every railway company during the summer months must be reckoned with. Once a lad from the farm takes his first excursion to the large town or seaside, the chances are that he will not settle down on the farm again. To make my statement clear, I should like to record what some railway officials told me at a large station some two years since. They stated that these weekly excursions were the best and cheapest means of advertisement for the companies, for they knew from experience that these country lads kept their eyes open when out on an excursion. They saw the porters waiting about for their various trains to arrive, and concluded that their duties were light and wages large, and forthwith they made an application to the nearest stationmaster for appointments. These hills are being literally drained of young men in this way.

Again, there is the matter of education. Is it reasonable to expect a lad who has passed the fifth standard in an elementary school to spend his life on the farm for weekly wages of 14s. or 15s.? It is utter nonsense to expect anything of the kind. Holidays are another obstacle. The average farmer has a great aversion to holidays; he likes long hours and a fair amount of work, and I am sorry to say he is not always sympathetic. These are a few of the causes we have to combat. Now for a solution. At present one is inclined to write the word "insurmountable." I might, however, be allowed to make a few suggestions. First of all, create a true love of gardening, teach the labourer to grow some of the choicest kinds of vegetables—viz., Asparagus, Seakale, Rhubarb, which can always be disposed of at a profit, even in this neighbourhood. Pay better wages, or better still, let the labourer have an interest in the profits of the land, or let him have a plot to himself. I shall be told no doubt that this won't work, because he will want to spend the whole of his time on his own plot; but I am sure this could be mutually and agreeably arranged. Thirdly, make his cottage and its surroundings more comfortable (most decidedly.—ED.), and above all, let Parliament grant Old Age Pensions. I believe the latter would have a great effect. The labourer must be able to see a bright future, or he will continue to leave the land.—T. A., Cirencester.

Certificated Plants.—No. 10.

Hydrangea.

Commencing with *Hydrangea japonica rosea* in 1865, which obtained for Messrs. E. G. Henderson & Son the doubtful award of a second-class certificate, eight additional varieties of this species have obtained awards, the latest, the double form of *H. japonica* in 1890, but which one does not find in cultivation in the present day. The most lasting and the most distinct and useful is the white flowered *Thomas Hogg*, which was shown by Messrs. Veitch & Sons in 1887 and duly certificated. In common with the type it is a valuable market plant, and when well cultivated both are valuable decorative agents in the greenhouse and conservatory.

Heliotropium.

Fifty years ago the varieties of the *Heliotrope* were but few, and it was not until the early eighties that any award was made, *Swanley Giant* and *White Lady*, both exhibited by Mr. Henry Cannell, leading the way. M. Lemoine of Nancy was at work improving the *Heliotrope*, and succeeded as satisfactorily as he has with other plants. *Bouquet Parfum* and *Madame P. Athles*, both of which received certificates of merit, being of M. Lemoine's raising; as also *A. Delaux*, *Madame de Bussy*, *Princesse de Sagan*, and others. During the last two years varieties of vigorous growth, and carrying huge heads of bloom, also raised by M. Lemoine, have put in appearance, and they make very fine and attractive subjects both for pot culture in the greenhouse and for outdoor bedding purposes.

The Hyacinth.

Between 1859 and 1884 between fifty and sixty Hyacinths received certificates of merit. It was during the sixties and seventies that new Hyacinths were produced most numerous. At that time the Royal Horticultural Society held spring shows at South Kensington, when what are known as Dutch bulbs were largely and finely represented. The Society had in its schedule of prizes a class for new varieties, and this fact operated to give a considerable impetus to the raising of new varieties. Messrs. W. Cutbush & Sons, Highgate Nurseries, and Mr. William Paul of Waltham Cross were the great antagonists, and of the certificates of merit awarded up to 1884 they were pretty equally divided between these two exhibitors. Messrs. Veitch & Sons were also exhibitors of new varieties in the seventies and eighties, and a goodly number of awards fell to their lot. Since 1889 only three awards were made; the very fine standard of the quality reached makes it difficult to secure any advance upon it. A fine single yellow named *Yellowhammer*, shown by Messrs. Veitch & Sons was the last to obtain an award; it was in 1899. Some new varieties appear most seasons, but for the aforesaid cause they fail to obtain awards. *Gaultonia* (*Hyacinthus*) *candicans*, a very fine autumn-flowering subject, received a certificate in 1870, and as it is included in most bulb catalogues under the name of *Hyacinthus*, it is here entered with the Hyacinths.

Iberis.

Both perennial and annual forms have received awards during the last forty years, but very few of each. Of the annual varieties the most valuable are *Vilmorin & Co.'s* flesh-coloured *Candytuft*, a very distinct and handsome form, certificated in 1887 under the name of *rosea*, and the white *Empress*, which is now regarded as synonymous with Messrs. Dobbie & Co.'s *Hybrid Spiral*. It is a very fine annual *Candytuft*, and an excellent companion to the flesh-coloured. The large-flowered evergreen *I. gibraltarica* received an award in 1871, and in 1883 a form of it shown under the name of *hybrida*, of dwarfer growth, and said to have been obtained from *I. gibraltarica* crossed with an annual form, and bearing darker flowers, was similarly honoured. The double form of *I. sempervirens*, distributed some years ago, proved very disappointing. As *Arabis* is sometimes erroneously confused with *Iberis*, it may be stated that the double form of the *Wall Cress* (*Arabis alba flore-pleno*), known as *Corbeille d'Argent* and *Snowdriit*, is one of the very best introductions in the way of hardy perennials during the last few years, and it has obtained an award of merit subsequent to the publication of the Society's list.

Impatiens.

The Society's list shows that two introductions, viz., *I. Sultani*, introduced from Zanzibar some years ago, and *I. Hawkeri*, the former with bright rosy red blossoms, the latter of a deep rich carmine, obtained certificates of merit, the first in 1883, the latter in 1886. It was thought at the time of their introduction they might prove of value in originating a new race of Balsams, but have not done so. The two forms were popular for a time, and both are very showy stove plants, but, owing possibly to their requiring stove treatment to do them full justice, they have ceased to be much grown. Even the fine varieties of the common Balsam, which were such favourites with the gardeners of a generation or two ago, have lost their attractions, though from their fine double character and generous floriferousness, they possessed a great value as decorative plants. They have almost

ceased to be exhibition subjects. One of the newest introductions is Herr Ernst Benary's Prince Bismarck, brilliant salmon rose, and very double, which comes quite true from seeds. Lord Roberts, brilliant blood red, and Queen of Whites, pure white, have the reputation of being very fine varieties.—R. DEAN, V.M.H.

Gadding and Gathering.

"HERE AWA', THERE AWA'."

A Practical Gardening School.

THE Countess of Aberdeen on Friday last, 17th inst., presented the first diplomas won by the students of the Royal Botanic Society's Practical Gardening School. Some of those who understand the condition of the Society's gardens at Regent's Park may wonder when this movement—this Practical Gardening School—was started, who teaches, and also what is taught. Firstly, the "School" originated three years ago; secondly, Mr. E. F. Hawes is superintendent of the garden, he has assistants, and "all-gardening," every phase of it, is supposed to be taught. Mr. Frederick Clifford, K.C., discharged the presidential duties when the Countess of Aberdeen distributed the diplomas, and made some interesting observations. He quoted from a memorandum prepared by the Society for presentation to a Committee of the Treasury Bench of the House of Commons when the Royal Botanic Society had, some time ago, petitioned for a money grant to aid them in their work. The memorandum notified the extent of the garden (about 4 acres), and went on to explain that the Society's gardens contained a collection of medicinal plants arranged in beds according to their natural orders and affinities, besides having conservatories representing forms of tropical vegetation, and grounds filled with a named collection of trees, shrubs, and hardy plants.

The answer received from the House of Commons was understood to say that the gentlemen to whom the Society's petition had been made, knew nothing of the work being carried on, nor of the value of the Botanic Society's garden; and so the matter fell through. The president mentioned that 60,000 (?) specimens are given from the gardens each year to students, artists, and others. Students attend the gardens from the London University, and from all the London hospitals, while frequently rambles' clubs and parties, with a view to botanical study, receive privileges to visit. The Practical Gardening School is prosperous. It started with six students; these increased to twelve, with two lady gardeners; then last year there were nineteen boys, with still the two ladies, while during the course of this year other boys have joined, to swell the total to twenty-two. The questions asked at the examination, for which the diploma is awarded, follow on the lines of those put at the Royal Horticultural Society's examination. One of the practical questions at the Royal Botanic Society's examination was: "Name all the vegetables growing in the students' garden, and describe their culture. If any have failed, explain the reason why." The friends who attended at Friday's distribution of the diplomas were told that the students answered that question well. Mr. Jordan, Superintendent of Regent's Park, was examiner.

Here are other samples of the questions put before second-year students. 1, "Explain how lawns should be cared for, relaid, and renovated." 2, "What is understood by a plant's food, and its constitution; how do plants obtain their food?" 3, "Mention the different parts of a hot-water heating system, and explain how the circulation works." Theory and practice go hand in hand, and there are 4 acres for twenty-two students! Students of the third and

last year are asked to describe the principles of classification, hybridisation, and even landscape gardening is included in the curriculum—at least questions are asked on this subject. If I may be allowed one comment, it will be to say that when the youths from this Regent's Park garden go into up-to-date gardens, either private or commercial, their eyes will be opened.

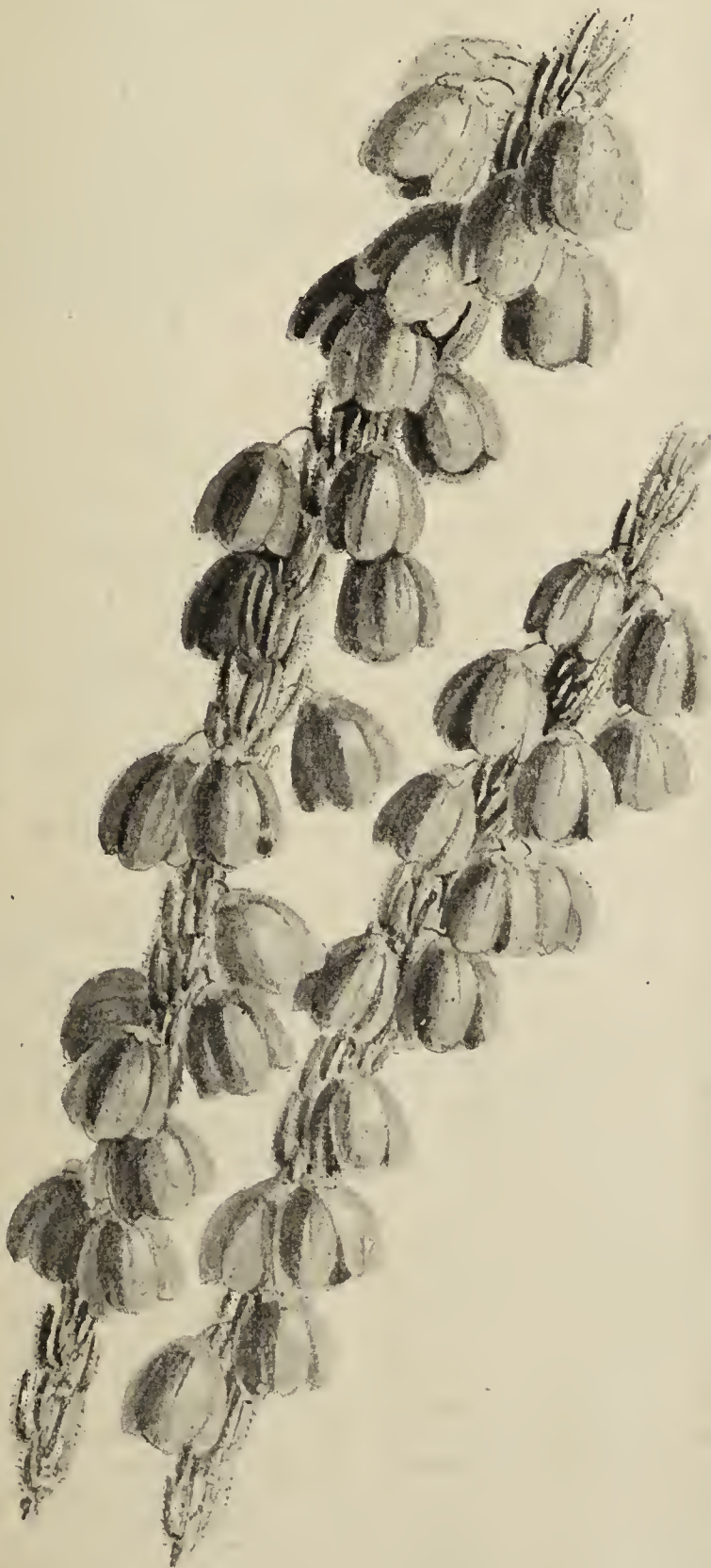
Laing's of Forest Hill.

Clivias have been specialties of the Forest Hill firm (London, S.E.) for many years, and at present the collection is at its brightest and best. New varieties, the result of crossing and selection, are yearly resulting, till at length plants with greatly increased blooms and ponderous trusses have been evolved. *Clivia limonia* is as yet rare, and is pale cream coloured. C. Sir George White has enormous trusses, and Kentish Beauty, as a novelty, has yet its way to make. Harry Laing has bright, open-mouthed flowers; Right Hon. Joseph Chamberlain is one of the best; Lady Sarah Wilson, General Buller, and Queen Alexandra are also new; the latter has well-expanded blooms, pale in the centre, and having a brick red edge. Besides their numerous collection of tuberous-rooted Begonias for bedding or pot culture, the Messrs. Laing have been turning attention also to Streptocarpuses, with results that, so far, are gratifying to themselves and plantsmen generally. They were amongst the earliest, if not absolutely the first, to introduce the multiflora strain. They began with the ordinary blue flowered greenhouse Streptocarpus, upon which they have worked till, at the present time, the varieties of this exquisite conservatory subject range in colour through blue, violet, purple, mauve, magenta, red, pink, and on to spotless white.

Some of the forms combine blue and white, a blue edge and white tube, or *vice versa*. The selection from which one may pick and choose is increasing each season, but enough has been already secured to glorify our gardens greatly in the spring months, compared to what the practical man was at one time dependant upon for his decorative purposes. A pinch of seed is easily sown, and, as a rule, the Streptocarpus responds to ordinary care and culture.

Gloxinias were sturdy and fine in the early part of May. Only a few were then producing flowers, but among them I noted Mrs. Laing, of a deep reddish purple, and having a lilac edge; and near it John Laing, a brilliant amaranth, a glowing colour with a clear white edge. Lady Edridge was a handsome purplish-violet variety, deserving the attention of specialists. Houses are devoted to miscellaneous collections of plants, including all classes of decorative Palms (for it must be borne in mind that the firm are large decorators), Ferns, and stove and greenhouse plants. Caladiums occupy the entire space of one large span-roofed house.

Pot Vines were thriving amazingly, and here were included all the newest and best. Diamond Jubilee, Lady Hutt, Muscat of Alexandria, Black Hamburgh, Lady Downe's, Foster's Seedling, Appley Towers, with others were each clean and exceedingly strong in 12-inch pots. Figs in pots were so numerous as to constitute quite a feature of the establishment, and in an orchard house in a branch nursery a whole representation of forced fruit trees were to be seen.—WANDERING WILLIE.



TETRATHECA HIRSUTA.

Manuring Orchards.—For an orchard of stone fruits, blood and bone manure with 10 per cent. of sulphate of potash added, or a special and complete fertiliser, which may also be used for Citrus trees, instead of the bone dust and potash, is recommendable. In either case the manure should be well covered, the most effectual plan being with the spade or fork; hand cultivation, though costing more, is always worth more than mere ploughing.

The Heating and Ventilating of Hothouses.*

WITH the enormous increase in the prosperity and wealth of the country during the last fifty years, hothouses for the cultivation of fruits and flowers have increased in a full proportion. The maintaining of an equable temperature in such houses when the outside temperature varies sometimes as much as 20° to 30° in twenty-four hours is not without difficulty. The means used to accomplish this is in nearly every case now hot water circulating in pipes; the days of the old brick flues have gone.

The theory of the circulation of hot water in pipes is very interesting, for we are presented with an apparent anomaly by the

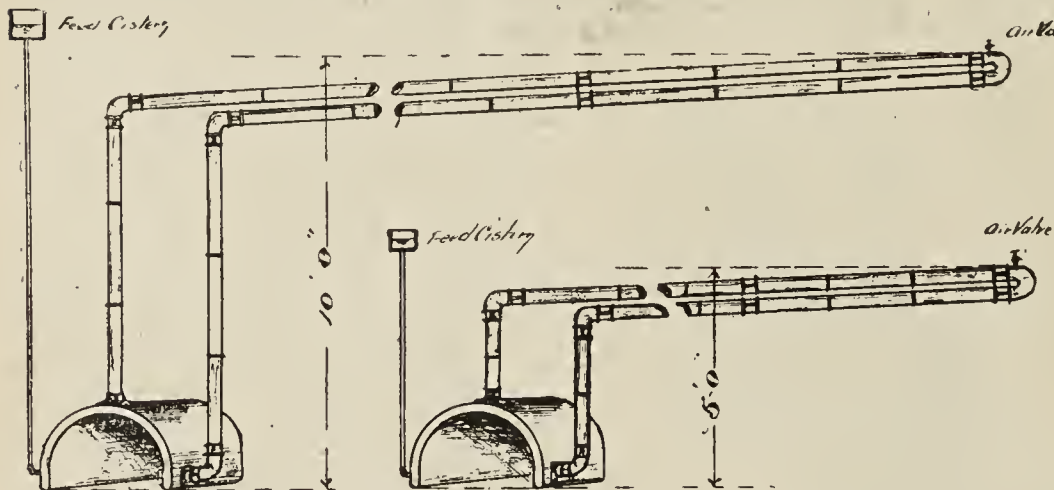


FIG. 1.—BOILERS, SHOWING FLOW AND RETURN.

rapid rise of the water in the flow pipe, apparently against the universal law that water flows to the lowest point—finds its level. But this is not the occasion for discussing this aspect of the question to any great extent. In passing, however, I may be allowed very briefly to draw attention to the cause of the circulation in a hot-water apparatus.

Fig. 1 represents an ordinary apparatus with a saddle boiler to which is attached in the ordinary way a flow and return pipe; the flow in all cases and in all classes of boilers must be from the highest available point of the boiler, and the return should rejoin the boiler as near the bottom as practicable. There is thus an endless pipe, the boiler being practically a part of the pipe enlarged and shaped for the application of heat. When such an apparatus is filled with water through the cistern and feed pipe it is ready for use. When heat is applied to the part of the endless tube called the boiler what happens is this, the water expands—expands equally in all directions, downwards as well as upwards; but inasmuch as there is less resistance in the upward direction the whole expansion is diverted that way, the longer, or rather higher, column of water in the return pipe resists the push of the expansion, and the hot water is forced upwards, thus the circulation is begun and in the same manner continued. It is clear that the cause of the upward flow of the hot water in the flow pipe is the greater density and weight of the higher and colder column of water in the return pipe.

It can be proved that with an apparatus having a height of 5 feet from the lowest to the highest point, and with an average difference of 10° between the flow and return pipe, the water in the return is continually falling with a theoretical velocity of 68.4 feet per minute. With an average height of 10 feet the fall per minute is 96.6 feet, and in an apparatus having a height of 20 feet the theoretical fall is 136.2 feet per minute; in short, the motive power in a hot-water apparatus is entirely in the return pipe, the amount depending on the height and on the difference of temperature between the flow and return. In quoting these figures no account is taken of the friction, which may be very small, or may be sufficient to wholly stop the circulation.

In the heating of hothouses it is of the utmost importance to remember that the motive power is in proportion to the difference in height between the lowest and the highest points of the apparatus, which practically means the depth of the stokehole and rise of the pipes. Attempts are sometimes made to avoid sinking a stokehole, but such attempts are bound to be failures, and are only attempted by people without any knowledge of the underlying principles which govern the circulation of hot water in pipes. It is well known to all experienced heating engineers that a boiler quite powerful enough to heat 1000 feet of pipe where there is a height of 25 feet or 30 feet

will not efficiently work more than 750 feet when the height is only 5 feet or 6 feet. Along with this must be considered the frictional resistance, which is the work to be accomplished.

For hothouse work there is a general agreement that a 4-inch pipe is the most suitable in regard to the quantity of water and the friction on the walls of the pipe; 3-inch and 2-inch pipes may be, and often are, used, but probably 80 per cent. of the hothouses erected are heated with 4-inch. In very large apparatus larger pipes are often used for mains, but the radiating pipes are almost invariably 4-inch. The relation between the size of the structure to be heated and the amount of heating surface is of the greatest importance; and although there are no scientific rules for this, practice has been much on the following lines, which, I think, except in the most exposed situations, are safe lines. Of course provision must be made against the coldest weather, which may be taken at 32° of frost.

For conservatories where a temperature of not more than 45° or 50° is wanted there should be 1 foot of 4-inch pipe, or its equivalent, for every 35 cubic feet of space. For plant houses, where a higher temperature may be required, the proportion should be 1 foot of pipe to every 25 or 30 cubic feet of space. For stoves and Orchid houses, and also for early vineries, the proportion of heating surface should be still higher. An Orchid house 12 feet wide requires four rows of 4-inch pipes along each side, which gives 1 foot of heating surface to every 12 or 13 cubic feet to be heated. The lean-to and semi-span type of early vinery, 16 feet wide, should have eight rows of pipes, being about 1 foot of pipe to every 15 cubic feet to be heated. An intermediate vinery, if span-roofed, and 24 feet wide, should have twelve rows of 4-inch pipes, giving 1 foot to about 16 or 17 cubic feet. A span-house naturally requires a larger proportion of heating surface than a lean-to.

Peach houses 14 feet wide, with four rows of pipes have a proportion of about 1 foot of heating surface to every 28 cubic feet, which may be taken as a fair medium where early forcing is not attempted. Melon and general forcing houses often have a forcing bed on each side, with four rows of pipe below each bed. When this arrangement is adopted it is desirable to have more than the usual proportion, as those pipes in the chamber below the bed cannot be counted upon but to about one-half their heating value. It is usual to put a row of pipe along the side above the bed, close to the front; but, in addition to this, it is desirable to have some pipes in the footway covered with an iron grating. These various circulations should be controlled by valves, as there will be times when no surface

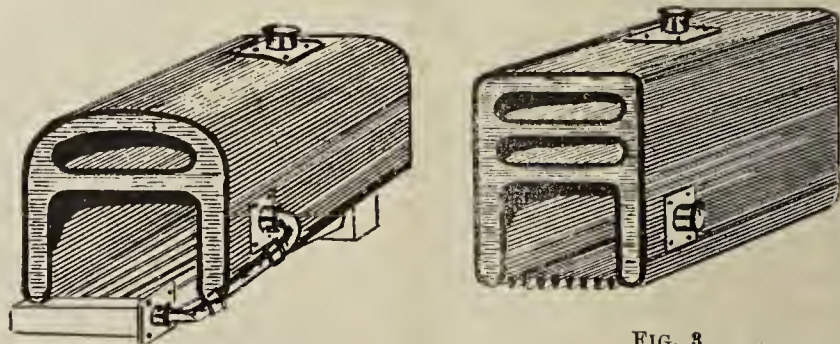


FIG. 2.
TERMINAL SADDLE BOILER.

FIG. 3.
TERMINAL SADDLE BOILER,
ANOTHER PATTERN.

heat may be required, whilst a good strong heat is needed below the forcing beds. There should be ventilators in the wall of the forcing bed for the admission of air, and other ventilators above, close to the glass, for the escape of the heated air. In this way the temperature can be regulated as required.

It is not necessary to go into the question of boilers. There has been more controversy about the merits of boilers than any other detail in connection with hothouses. There are numerous patent boilers in the market, each one put forward by the maker or patentee as being the best. I have had very considerable experience of these during the last forty years, and my opinion is that a good deal of what is said in their favour may be discarded. The old saddle boiler still keeps its hold as one of the simplest and, under reasonable conditions, one of the most economical; but I could not advise its use (except under special conditions) for quantities over 750 feet of 4-inch pipe. For quantities from 500 to 2000 feet the terminal saddle boiler is powerful and economical. (Figs. 2, 3.) It takes more depth of stokehole than the plain saddle. For larger quantities than 2000 feet I very strongly recommend a steel Cornish or annular riveted boiler, and where there is a reasonably good draught, water bars are a great saving of fuel. (Fig. 4.)

* Paper read by Mr. A. DONALD MACKENZIE before the Royal Horticultural Society, December 4th, 1900.

Water bars may also with advantage be used with saddle and terminal boilers. With these water bars a large amount of heat is got when the fire is banked up, which would otherwise be lost or go to burn up ordinary metal bars; for it must always be kept in mind that what is wanted is a furnace and boiler that will go on for eight or ten hours without attention. A very powerful sectional cast-iron boiler has been introduced into this country from America. I cannot say I am partial to cast iron for boilers, as, owing to the nature of the metal, it is much more liable to accident than malleable iron and steel.

The heating of a single hothouse, or even two or three when close together, is a comparatively easy matter, but when there are a great many circulations of various lengths and of various heights, there is very great difficulty sometimes in getting the water to circulate in the longer circulations. As an example of this I may refer to the

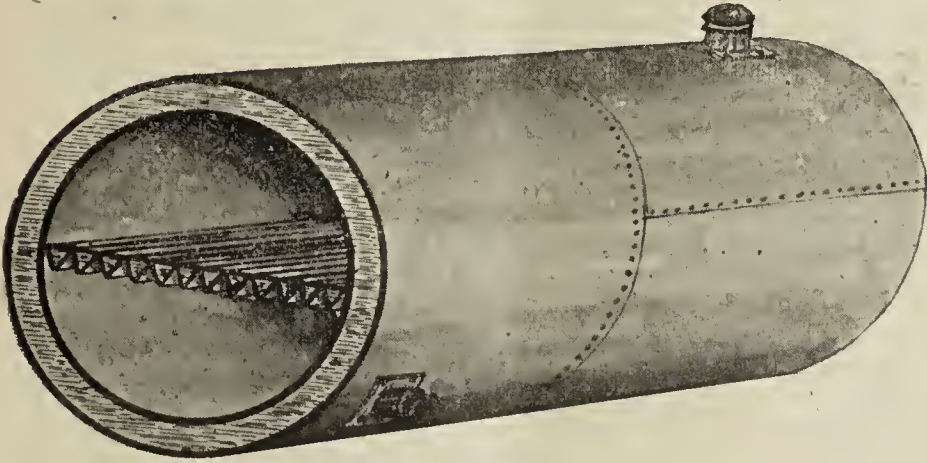


FIG. 4.—CIRCULAR RIVETED STEEL BOILER.

very large apparatus in use at the gardens at Sandringham, the Norfolk home of H.R.H. the Prince of Wales. In this case some of the houses heated are over 400 feet away from the boilers, while there are others close at hand. Large mains are carried underground in a built tunnel large enough for a man to creep through and examine the pipes when required—all underground pipes should be in tunnels. The difficulty in getting the circulations at the extreme ends of the system to heat is caused by the short-circuiting of the nearer circulations—the hot water takes the line of least resistance. It runs round one house before it can reach another more distant, and when the hot water from the nearer house arrives at a point about midway in the main return it begins to back up in the wrong direction instead of going on to the boiler, and causes more or less of an obstruction—"a block." This may, in some cases, be so effective as to stop all circulation in the furthest off parts of the apparatus. And there is only one way of preventing it, and that is by regulating the valves in houses near the boiler. The valves should be very carefully watched until it is found how much or how little they must be open to prevent the return water arriving at the midway point sooner than the return from the further off house. If the furthest off houses, on the other hand, were on a very much higher level, the tendency would be for the hot water to rush past the middle houses and the other circulations, and possibly the furthest off houses would have to be checked. In short, nothing but a careful study of the conditions and regulation of the valves will be effective in such a case in getting the required heating where wanted. In houses where a high temperature is kept up, especially where the sides are pretty high, a 2 or 3-inch pipe round the eaves is very useful to prevent draughts. This has been adopted with very beneficial results by Professor Bayley Balfour in the Royal Botanic Gardens, Edinburgh.

I have left myself no time to say much about the ventilation of hothouses, but this is less to be regretted because ventilation is a very simple matter. In all cases there must be bottom ventilation and top ventilation. The bottom openings should be as near the floor level as may be practicable, and with Orchid houses, and where other delicate plants are grown, the cold air should be made to impinge on the hot-water pipes, so that the chill may be taken off. The particular manner of doing this must be left for each case to be treated on its merits, the most important matter being that the opening arrangement should be such that 1 inch or 1 foot of an opening may be had at pleasure. The top ventilation should be at the highest point, and also must be arranged so that a very little space may be open in cold weather, and as much as possible in very warm weather.

Large Rhubarb.—Mr. J. Knott pulled up a stick of Rhubarb in the Rectory garden, Black Torrington, Devon, on Saturday, which measured 21 inches in length, 6 inches in girth at the smallest part, and 7 inches round at the largest part, while the longest rib of the leaf measured 30 inches in length, and the circumference of the outer edge of the leaf measured 18 feet 6 inches.

Societies.

Bath and West and Southern Counties Show.

May 22nd to 26th, at Croydon.

This show, after a lapse of twenty-six years, again visited the flourishing borough of Croydon, in Surrey, on the dates given above. The show is really an agricultural one, though there are a variety of sections included, such as a bee-tent, a cider exhibition, a gallery of paintings, an industrial section, and a horticultural pavilion was also one of the features. We may refer in another place to the cider making and other points of utility and general interest, but meanwhile these lines briefly refer simply to the flower show on the occasion of the Croydon meeting last week. Messrs. Kelway & Son were forward from Langport with a beautiful collection of Pæonies, such as they staged in the Temple Gardens the same week. From Bath came Messrs. Geo. Cooling and Sons with Roses, and both Messrs. Wm. Paul & Son of Waltham Cross, and Messrs. Paul & Son, The Old Nurseries, Cheshunt, also staged representative collections and pot and cut Roses. Messrs. J. Laing and Sons, Forest Hill, S.E., had Begonias, Clivias, Streptocarpus, &c.; Mr. Thos. Butcher, Croydon, sent a mixed group; Messrs. Cutbush & Sons, Highgate, London, N., had Carnations, Roses, and other choice flowers. Pansies were well exhibited by Mr. F. Hooper, Widcombe Hill, Bath; while all the way from Exeter came Mr. W. J. Godfrey with a group of Zonal Pelargoniums and other florists' flowers. Mr. J. R. Box, Croydon, staged tuberous-rooted Begonias.

In the open grounds, each in separate stands, and displaying samples of their wares or productions, were the manure manufacturers, salesmen, and horticultural sundriesmen. The Anglo-Continental Guano Works (15, Leadenhall Street, E.C.) had a large exhibit, as also the Ichthemio Guano Co. of Ipswich. Messrs. Headly & Edwards, Ltd., Cambridge, showed garden seats, arches, and tents; Messrs. Inmans & Co., Stretford, Manchester, had greenhouses and rustic works; while the Weston-super-Mare Pottery, Tile and Brick Co., of the Royal Potteries, had terra-cotta statuary, fountains, vases, flower-pots, and other things. Altogether the show was very interesting and instructive.

Royal Meteorological.

The monthly meeting of this Society was held on Wednesday afternoon the 15th inst. at the Society's rooms, 70, Victoria Street, Westminster. Mr. W. H. Dines, B.A., the President, being in the chair. Mr. Rupert T. Smith read a paper on "The Periodicity of Cyclonic Winds," which was the result of a discussion of his own observations made in the neighbourhood of Birmingham during the twenty-six years 1874-1899. The equinoxes do not appear to be very stormy periods, but from the author's tables it is shown that the greatest frequency and force of cyclonic wind occurs some two weeks before the spring equinox, and some three weeks after the autumn equinox. Mr. W. Marriott gave an account of the bequest by the late Mr. G. J. Symons, F.R.S., to the Royal Meteorological Society. Mr. Symons (who died on March 10th, last year) was the founder of the British Rainfall Organisation, and was a most distinguished meteorologist. He took a great interest in the welfare of the Society, and held the office of secretary for a period of twenty-five years, and was twice elected president. By his will Mr. Symons bequeathed to the Society his cross of the Legion of Honour, the gold Albert medal awarded to him by the Society of Arts, the testimonial album presented to him in 1879 by the Fellows of the Royal Meteorological Society, and the sum of £200, as well as such of his books, pamphlets, maps, and photographs of which there was no copy in the Society's library. Mr. Marriott stated that from Mr. Symons' valuable collection he had selected for the Society over 5000 books and pamphlets, and about 900 photographs. A large number of the books were old and rare works, 750 bearing dates previous to 1800, while eight were as early as the fifteenth century. By this noble bequest the Royal Meteorological Society now possesses the most complete and extensive meteorological library in existence.

Shirley Gardeners' and Amateurs'.

A monthly meeting of the Shirley and Districts Gardeners' Association was held on the 23rd inst., Mr. B. Ladhams, F.R.H.S., in the chair. Mr. N. Blandford of Bitterne gave a most interesting lecture on "The Summer Treatment of Orchids." He defined summer as from Lady Day to Michaelmas. He gave useful suggestions for the cultivation of early plants, afterwards touching on those which should commence to grow in May or early part of June. Mr. Blandford's suggestions for avoiding the failure of plants was that all plants must have the proper season of rest. "Stove" Orchids, the lecturer said, always required careful watching at the commencement of the season. Care should be taken with the watering of this class, the roots being better too dry than too wet; also cool house Orchids, which would require a very even temperature all the year round, with less season of rest and more subdued light. The great difficulty in summer was to keep the air cool enough. The lecturer also touched on the different aspects, stages, syringing, insects, &c. At the conclusion a very useful discussion took place, in which Mr. Jesse Jones, Mr. B. Ladhams, and others took part. An exhibition was held at which six pots of Gloxinias were shown by Mrs. Keates, Rownham House (gardener, Mr. W. G. Bushell), each marvels of cultivation, and received a first-class

certificate; also from the same grounds came three fine *Calceolarias* and three spring Cabbage. Mr. B. Ladhams, F.R.H.S., showed a grand lot of cut blooms; A. H. Cobbold, Esq., *Begonia metallica*, *Spiræa astilboides floribunda*; Major Douglas, R.E., seedling 'Zonals'. The next lecture is entitled, "Is it Necessary to Grow Plants in Pots Under Glass?" by Mr. J. Weathers, Isleworth.—J. M.

Royal National Tulip, Southern Section.

The eighth annual southern exhibition was held at the Botanical Gardens, Edgbaston, Birmingham, on Thursday, May 23rd. "It was a pity that the date clashed with the Temple Show, as many prominent horticulturists were absent, and the nurserymen's exhibits were not so large as they otherwise would have been. However, Messrs. Barr and Sons sent a splendid lot of Darwin and English Tulips, which worthily obtained the gold medal of the Tulip Society and the medal of the Birmingham Horticultural Society. Messrs. Pope had also a very good exhibit of Tulips.

There was a surprisingly good show of Tulips exhibited by the members of the Tulip Society. The season has not been a good one, as the plants were injured by the March and April frosts, and the blooming season has been largely made up of scorching sun, rough east winds, and bitterly cold nights; consequently the flowers were, on the whole, smaller than usual, but the quality was superior to last year. Feathered bizarres were fair, the best being Garibaldi, Sir J. Paxton, Masterpiece, and W. Wilson. Feathered bybloemens were very good, Bessie, Talisman, Mrs. Hepworth, E. Pegg, and Mrs. Jackson being well shown. Feathered roses were weak, and such ancient sorts as Comte de Vergennes and Andromeda had to be shown in the first stand of twelve. Flamed bizarres were good: Sir J. Paxton and Saml. Barlow are rapidly putting all other varieties in the shade. Flamed bybloemens were excellent, Talisman, Chancellor, and Adonis being the best. Breeders were good, Sir J. Paxton, Goldfinder, and Alfred Lloyd being the best of the bizarres. Mrs. Barlow, A. McGregor, and Lady Grosvenor were good in the rose section, and the best bybloemens were Bridesmaid, Adonis, Thurstan's 213, Talisman, and Alice Grey. Mr. Needham won the silver basket presented by Miss Willmott, of Great Warley, for the best twelve rectified Tulips. Mr. Bentley won the championship silver medal for the greatest number of first prizes, presented by the Birmingham Horticultural Society. The awards were made by the Rev. F. D. Horner and Mr. B. Simonite.

In the afternoon a conference was held, Professor Hillhouse presiding. Papers were read by Principal Hall, M.A., on "What is an English Tulip;" by Mr. J. W. Bentley on "The History of the English Tulip;" by the Rev. F. D. Horner on "Seedling Raising;" and by Mr. C. W. Needham on "The Cultivation of the Tulip." It is to be hoped that the Show and Conference may stimulate the cultivation of the Tulip in the Midlands. The Tulip Society is under a deep debt of gratitude to Professor Hillhouse, Mr. Lathom, and the Birmingham Society for their kind and cordial reception and the admirable arrangements they made for the show.

RECTIFIED TULIPS.—Class A, twelve dissimilar rectified Tulips, two feathered and two flamed in each class.—First, Mr. C. W. Needham, Hale, Altrincham, with Samuel Barlow, Sir Joseph Paxton, flamed bizarres; Sir Joseph Paxton, Magnum Bonnm, feathered bizarres; Mabel, Annie McGregor, flamed roses; Andromeda and Comte, feathered roses; Talisman, John Hart, flamed bybloemens; and Mrs. Hepworth and Talisman, feathered bybloemens. Second, Mr. J. W. Bentley, Castleton, Manchester, with Samuel Barlow, Sir Joseph Paxton, flamed bizarres; Garibaldi and Masterpiece, feathered bizarres; Aglaia, Annie McGregor, flamed roses; Comte, Mrs. Collier, feathered roses; Bessie, Elizabeth Pegg, feathered bybloemens; Talisman and Chancellor, flamed bybloemens. Third, Mr. A. Chater, Cambridge. Class B, six dissimilar Tulips, one of each class.—First, Mr. Bentley, with Samuel Barlow, Mabel, Talisman, flamed; John Moody, Jane, Bessie, feathered. Second, Mr. A. D. Hall, Wye; and third, Mr. Needham. Class C, six dissimilar Tulips, two in each class.—First, Mr. G. Eyre, Ripley, Derby; second, Miss Scott, St. Albans. Class D, three feathered Tulips, one in each class.—Messrs. Bentley, Needham, Hall, Eyre, in this order.

BREEDER TULIPS.—Class E, six dissimilar breeders, two of each class.—First, Mr. Bentley, with Goldfinder, Alfred Lloyd, bizarres, Bridesmaid and Thurstan's 213, bybloemens, Mrs. Barlow, and Hepworth's 9/64, roses; second, Mr. Hall, with Goldfinder, Sir J. Paxton, bizarres, Adonis and E. Pegg, bybloemens, A. McGregor and Mrs. Barlow, roses; third, Mr. Needham, with Goldfinder and Sir J. Paxton, bizarres, Adonis, E. Pegg, bybloemens, Mrs. Barlow, A. McGregor, roses; fourth, Mr. Cater, with Goldfinder and Sir J. Paxton, bizarres, Alice Grey and Bridesmaid, bybloemens, Mrs. Barlow and A. McGregor, roses; fifth, Mr. Whytehead, with Sir J. Paxton and Sulphur, bizarres, Martin's 117, E. Pegg, bybloemens, Mabel, A. McGregor, roses.

Class G, three dissimilar breeders, one of each class.—First, Mr. Hall, with Sir J. Paxton, W. Parkinson, and A. McGregor; second, Mr. Bentley, exhibiting Goldfinder, Thurstan's 213, and A. McGregor; third, Mr. Needham, with Sir J. Paxton, Alice Grey, and Mrs. Barlow; fourth, Mr. Eyre, having Sir J. Paxton, E. Pegg, and A. McGregor; fifth, Miss Scott, showing Lord Delamere, Talisman, and J. Heap.

Class L, single blooms, bizarre breeders.—First, second, third, fourth, fifth, Mr. Bentley, with Sir J. Paxton, Hepworth's 100/64, Alfred Lloyd, Lloyd's Seedling. Bybloemen breeders.—First, second, third, Mr. Needham, with Talisman, Bridesmaid, Alice Grey; fourth

and fifth, Mr. Bentley, with Talisman and Seedling. Rose breeders.—First, Mr. Hall, with Mrs. Barlow; second, Mr. Needham, Lady Grosvenor; third, Mr. Eyre, having Rose Hill; fourth, Mr. Needham, who staged Lord Derby; and fifth, Mr. Hall, with Loveliness. Mr. Bentley showed Sir Jos. Paxton, the premier breeder in the exhibition.

Class M, collection of English Tulips grouped for effect.—First, Mr. Bentley, with a very nice lot, including Goldfinder, Rose Hill, A. McGregor, Mabel, Talisman, Duchess of Sutherland, Adonis, Lord Stanley, Mrs. Jackson, Saml. Barlow, &c.

Ore (Sussex) Gardeners.

A meeting was recently held at Mr. Knight's nursery, Ore, to make arrangements for outdoor shows in connection with the Ore Gardeners' Society. Councillor Paulson took the chair, and there were present Messrs. W. Fittell (hon. secretary), W. Knight (hon. treasurer), W. Cramp, A. Cramp, R. Price, J. Bannister, E. E. Trinder, W. Foord, J. Hindell, W. F. Whitfield, W. H. Weston (president), A. Goodsell, jun., L. Apps, J. Elliott, and H. Purfield. The schedule is to be the same as the fête in 1899, with extra prizes to gardeners, amateurs, and cottagers for plants in bloom. The offer of 10,000 handbills for distribution, from Mr. L. Deverex, was accepted, and the Sports Committee (Councillors Sanderson and O. Wickens, Messrs. W. F. Whitfield, L. Deverex, and R. Voller) was elected. The Dancing Committee is to comprise Mr. T. Boucher, Messrs. F. Holman, and W. F. Whitfield.

Wargrave Gardeners.

The members of the Association met on Wednesday evening, May 22nd, to hear a lecture by Mr. W. Iggulden, F.R.H.S., on "Grape Culture." Being a market grower himself, the lecturer contrasted the methods of the "trade" and those of private growers. Mr. Iggulden spoke of the kind of houses best suited to the purpose of Grape growing, span-roofed ones being preferred, inside and outside borders and methods of making them up, mixed houses, planting, watering, colouring, ventilation, pruning, pests, and means of eradicating them, and exhibited photographs to show how his ideas and modes of cultivation had been carried out. A discussion afterwards took place, in which Messrs. Stanton, Powell, Hatch, Scott, and others joined. The lecturer answered a number of questions put by various members, and a hearty vote of thanks was accorded Mr. Iggulden for his valuable lecture.

Bowdley Horticulturists.

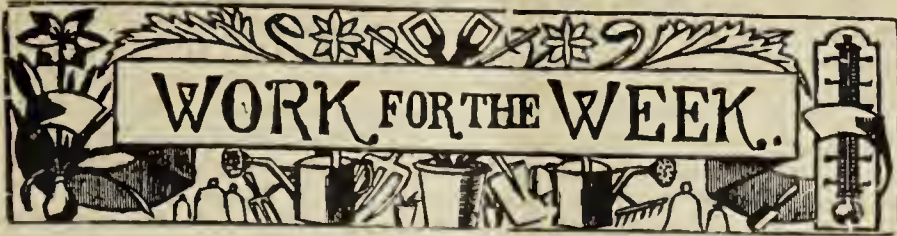
The Bowdley Horticultural Society has cause to congratulate its members on the recent visit of Mr. Rider Haggard, who was much interested in its plans and progress, and whose reference to the district in subsequent publications will be of importance to the locality. With this object in view, he has asked that full information may be sent him, in order that he may deal with the policy of the Society in some of his articles. Another distinguished personage who has become interested is the Bishop of Hereford, and at the request of the general committee the rector, who is chairman of the committee dealing with the subject, will send his lordship full information on the society's self-help work. The admirable practice of forwarding fruit, flowers, and vegetables to the infirmary will be initiated next week by the Rev. R. S. P. Chesshire and his committee. This is a capital example for similar associations to follow.

Shirley Gardeners'.

The members of the Shirley Gardeners' and Amateurs' Mutual Improvement Association have issued their annual report and balance sheet. The Society last year visited the Temple Show, which seems each year to attract more and more of the horticultural societies lying within a radius of 150 to 200 miles from London. The Association were out again in a party in the month of September, visiting Chilworth Manor. The work of the Association generally has been bright and influential. The funds are in a prosperous condition, the balance-sheet showing a balance of £40 8s. 3d. in the general account, and 12s. 10d. on the "outing" account. It is a good thing when all the gardeners in a given neighbourhood bind themselves together in associations for mutual assistance in craft-knowledge. The hon. secretary of the Shirley Association is Mr. John Miles, 222, Portwood Road, Shirley.

Wood Green and District Horticultural.

This Society held a very successful meeting at the Masonic Hall, Wood Green, on Tuesday, May 14th, when Mr. R. Core (gardener), F.R.H.S., gave a most interesting and instructive lecture on "The Zonal Pelargonium," treating the subject very lucidly from its early history up to the present date. The usual monthly show was also a great success, and keen rivalry was established in the competition for the prize given by Mr. Amos Perry, jun., of the Hardy Plant Farm, Winchmore Hill, the winner being Mr. W. E. Phillips with a magnificent group of Caladinms, other members running him very close. Mr. E. J. Wickenden staged a handsome group of Orchids and Ferns, in which some excellent *Cypripedium* insigne were especially noticeable. Mr. Amos Perry staged a magnificent collection of new Irises, which ought to become very popular, some of the colours being very bright and a great acquisition. Both Mr. Wickenden and Mr. Perry were awarded a hearty vote of thanks for their exhibits.



Hardy Fruit Garden.

Removing Superfluous Growths.—All kinds of fruit trees of a choice character growing in a restricted manner should have special attention devoted to them at the present time, in order to thin out, regulate, or remove entirely, growths which are not required. The work is best done a little at a time, dealing first with parts of trees where the growths are rankest and most vigorous. Much good accrues to those left by the removal of all which tend to crowd. The proper plan is to go through a course of active dishudding when growths are an inch long, as by this means a quantity of unnecessary material is dispensed with, and the more legitimate shoots have an excellent chance of receiving the full benefit of abundant light and air. Bush trees require the interior growths entirely removing, while the others should be reduced in numbers, leaving the best placed pointing outwards, and at a due distance apart. Give careful attention to the proper balance and shape of trees. Cordon trees must not be allowed to be crowded with too many shoots, or the fruitfulness of all will be impaired. Apricots, Peaches, Nectarines, and Morello Cherries, trained on the extension principle, require frequent attention now in laying-in growths, alike for the benefit of the latter, the trees as a whole, and the fruit.

Thinning Fruit.—It is early yet to thin much fruit from the majority of trees, but Apricots, Peaches, Nectarines, and Plums may be dealt with, as the fruits are now in a forward state, and those growing in quite unsuitable parts may be cut off, leaving the final thinning a little later. Gooseberry bushes may with great advantage have the crop lightened, and as the green fruits are useful now for tarts, and later for preserve making, the reducing of the crop can be gradually carried on. While the cherries remain green they are of use for jam and bottling. The largest fruits should be picked now, leaving the smaller to develop, thus prolonging the season for green fruit.

Newly Planted Fruit Trees.—Young trees in the open, recently planted in autumn or spring, must be examined to see that the soil is thoroughly moist, as active and vigorous growth cannot take place unless the soil is adequately moist. If it is so, a mulch of manure over the roots will tend to conserve it in that condition. Especially after a good watering has been given should a mulch be applied, as it renders frequent soakings unnecessary. Young wall trees may possibly be very dry at the roots, and refuse to grow freely in consequence, hence give particular regard to the condition of soil. Make it fairly firm about them, moisten it, and mulch the surface. The shoots of young wall trees must also be disposed in the proper direction, nailing or securing them now permanently to the wall or trellis. The usual methods of balancing growths must, if the trees are unevenly developing, be resorted to. These consist in training upright the weak growths and depressing the strong and vigorous, eventually returning them to their original positions when the balance of growth has been restored. Syringing will be very beneficial in promoting growth and maintaining the trees clean, especially with young trees, as well as those advanced in age and size. Aphides cannot colonise so readily at the points of young shoots when the syringe or garden engine is used freely.

Strawberries.—The principal matter necessary is to lay down a mulching between the rows in order that the ripe fruit may have a clean bed to rest upon. Chopped straw forms an admirable material, though dependence is usually placed upon a layer of strawy manure, a mixture of long and short laid down early in April. By the time the fruit is ripe the surface has become bleached and clean. Early runners, where not wanted for stock, may be cut off. Liquid manure, if available, is valuable to afford to plants when the fruit has set. Only plants in fruit should be fed, as it is not desirable to promote a luxuriant growth of foliage.

Outdoor Vines.—Those now extending young growth freely require frequent attention in rubbing or cutting out unsuitable shoots, tying or nailing laterals which should be showing bunches, and stopping them at one joint beyond the show of fruit. The leading growth may extend, especially if there is space to fill. Provision may be made for good future crops by encouraging the production of young wood from the base, which should be encouraged to grow strongly, and of fair length, say 4 or 5 feet, before stopping. At that point, however, it will be beneficial to stop, and thus concentrate the energies in plumping up the buds in the axils of the principal leaves. Where there is a good show of bunches some reduction in their number must be made, allowing not more than one on each lateral shoot; but where two lateral growths proceed from a spur on the main rod one only should bear a bunch. Watering the roots is a matter needing attention if the soil about them, as it often is, near walls, very dry. Mildew, which attacks outdoor Vines, is the result of poverty and dry conditions of soil. A thorough and copious soaking will remedy this, first applying clear water, then

liquid manure, and follow with a mulching. Frequent and daily syringing is not necessary, but an occasional washing with the garden engine will be beneficial.

Fruit Forcing.

Cherry House.—At this time of year there is nothing in the fruit way so charming as a house of Cherries, whether the trees are planted out and trained to trellises, or grown in pots as standards. It is, however, a great mistake to have a number of varieties for affording a general supply, and a long succession of fruit can be had by forcing such as Early Rivers, Governor Wood, Black Tartarian, and Elton. When the whole of the crop is ripe the chief consideration will be to keep the fruit fresh and prolong the season as long as possible. Shading will do so, but it is only advisable when the Cherries are directly exposed to the sun, owing to the limited foliage. Free ventilation must be attended to, and in hot weather a sprinkling of water on the surface of the border, as well as the paths, in the hottest part of the day, will assist in keeping the fruit plump. The supply of water must not be neglected, for dryness at the roots is inimical to the formation of the buds for the ensuing crop of fruit and health of the trees.

Pits and Frames.—The Cucumbers in these should be ventilated from 7.30 to 8 A.M., just a little, to allow the pent-up moisture to escape, and the atmosphere to warm gradually with the advancing sun, as the foliage of Cucumbers is soon scorched. In the hottest part of the day a slight shade from fierce sun will be beneficial, and keeping through the day at 85° to 90°; close so as to increase 5° to 10° with sun heat. Keep the plants watered as required, about twice a week will be necessary in bright weather, and damp overhead on fine afternoons. Avoid overcrowding the foliage, thinning well, keeping up a succession of bearing wood, removing bad leaves, stopping one or two joints beyond the show of fruit, and avoiding overcropping.

Peaches and Nectarines.—*Early Forced Houses.*—The fruit of the very early varieties is gathered where the trees were started in late December or at the new year. The wood on which the fruit has been borne should be cut out, and if all superfluous growths are removed light and air will be admitted to the shoots which are to produce fruit next year. Thoroughly cleanse the trees by washing them forcibly with water from the syringe or engine, and if they have become infested with red spider or thrips add 2 ozs. of petroleum softsoap to each gallon of water. Scale also often appears on forced trees, weakening the growths by extracting the juices, and impairing their health by the filthy excreta. In that case use the petroleum softsoap a little stronger, or dissolve 1½ lb. of softsoap in a gallon of water by boiling, and when boiling-hot add half a pint of paraffin oil, stirring briskly till thoroughly amalgamated, then dilute to 10 gallons with hot water, and apply at a temperature of 100° to 110° by means of a syringe, or preferably, for economy, a spraying machine, directing the spray upwards, so as to reach the pests that are fastened on the midribs of the leaves as well as those on the young wood. Maintain the border in a thoroughly moist state. Admit air freely, and keep the house as cool as possible, but not allowing the temperature to fall to an unsafe point at night, as this tends to premature ripening of the foliage. The roof-lights should not be removed, nor trees in pots placed outdoors, until the weather becomes settled, which does not usually occur until the middle of June.

Succession Houses.—Lack of moisture at the roots prejudices the health of the trees, inducing attacks of red spider and dropping of the fruit, with premature ripening of the wood. In all cases before watering make an examination of the border, and when the soil is becoming rather dry, not before, afford a thorough supply. Overcropping is a frequent cause of premature ripening and lack of quality, as well as size in the fruit. Thin, therefore, in the early stages of swelling gradually, and always have regard to the position of the fruit for receiving light, exposing them from the first as much as possible to the sun in order to secure high colour. Above all things attend to cleanliness, for it is absolutely essential to the perfection of the current crop, and the due provision of buds and stored matter for next year's fruiting.

Late Houses.—Thinning the fruit prior to stoning must be attended to, also dishudding, and tying-in the shoots. Do not overcrowd the growths, for the exposure to light is the essence of fertility. Ventilate early and freely on all favourable occasions; close early in the afternoon, so as to induce the fruit to swell kindly, and syringe in the morning and afternoon when the weather is bright. Aphides are very troublesome this season. Fumigate or vaporise moderately, having the foliage dry, and deliver the smoke cool. Syringing with quassia water, made by boiling 4 ozs. of chips in a gallon of water for a quarter of an hour, dissolving in it as it cools 4 ozs. of softsoap, straining, and applying by means of a spraying apparatus at a temperature of 100° to 110°. Mildew, and even "blister," are not absent this year from trees in cool houses. Probably they are too cold and moist at times, or so variable in temperature and moisture as to favour the parasites. Sulphur makes an end of the mildew, but both it and blister are more successfully combated by the use of the powder fungicides, such as anti-hlight, fostite, and strawsonite, containing sulphate of copper with lime. Sulphur, however, does not prejudice the fruit for use, it being important to thoroughly cleanse the fruit, by syringing, from poisonous substances.

TO CORRESPONDENTS

• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Horns and Hoof Parings (Reader).—They are of particular value in supplying nitrogen to the roots of trees.

Aphides on Peach Trees (A. L. S.).—We should try light fumigations on three consecutive nights, as a strong volume of tobacco smoke is injurious to the foliage of Peach trees.

Gymnogramma schizophylla (F. R. S.).—This is one of the best known and most graceful of the "Gold Ferns," and our illustration shows its character well. Pot in a compost of peat, 1 part; fibrous yellow loam, 1 part; and say a half part of coarse sand and some crushed charcoal. Maintain a temperature between 65° and 75°, or higher with sun heat. Shade from bright sun, but do not syringe the plants. Moisture is essential in the atmosphere.

Birds and Pears (M. M.).—Some stout circular pieces of cardboard similar to the collars that are used for supporting the petals of Carnations, with a slit made from the side to the centre, with a very small hole, so that the collars can be fitted round the stalk, would surely prevent the birds from pecking round the stalk. We have known the good effects of these collars in baffling the mischievous tits that seem to delight in spoiling as many Pears as they can.

Grapes Spotted (H. N. H.).—The berries are what is termed "spotted," which has been regarded by some cultivators as constitutional, inasmuch as the connection between the affected parts and the seeds and axis may be traced. On its first appearance, which is when the Grapes are young, tender, and swelling fast, a small irregular whitish mark is seen on the side of the berry, as if it had been bruised in some way, the pulp beneath dries up, and a sort of contraction occurs, the berry soon assuming a one-sided appearance or irregular form, and in this respect has a close resemblance to scalding. Indeed, some cultivators believe the spot to be caused by sudden chills, such as having the house very close and moist, and then suddenly, on some bright morning, admitting the external cold air too freely and too abundantly. This is practically the same as scalding—late or imperfect ventilation on some bright sunny morning whilst the internal atmosphere, and even the berries, are saturated with moisture. The preventive upon these grounds is a little ventilation constantly, increasing the ventilation early in the morning before the sun acts powerfully upon the house, and keeping a gentle warmth in the hot-water pipes, so as to prevent the deposition of moisture on the berries. But the real cause of spot is a fungus, *Gloeosporium laticolor*, for which there is no remedy, but the infested berries should be cut out, and the conditions of cultural treatment forewarned avoided, then spot seldom or never makes its appearance.

Injury to Strawberry Leaves and Blooms (County Armagh Strawberry Grower).—The leaves have small holes in them, and are probably caused by some weevil, good traps for which are condensed milk or similar tins sunk in the ground level with the surface, and a little tar water placed in each. The weevils hide by day, and come out at night to feed. They readily find the darkness of the tins, drop in, and never come out again. The flower buds and set berries are more or less browned and blackened, as if by frost, there not at present being any traces of disease. This we consider the cause of the mischief, some being similarly affected in low-lying districts, while those on higher ground are not injured in the least.

Peaches Unsatisfactory (N. A.).—It is difficult to account for three of the six trees in the house having a "nice crop" of fruit whilst the other three "have lost nearly all their fruit" when about the size of Peas. The cause is imperfect fertilisation, although the whole of the trees flowered well and the fruit set all right. There is a difference in variety, some varieties being more prone to cast the fruit before taking the first swelling after setting than others; but, apart from varietal proclivities, the casting of the fruit chiefly arises from imperfect ripening of the wood in the previous season, the trees being too vigorous, and prone to make wood rather than swell the crop. It is certain that a check to growth, such as that induced by careful lifting of the trees in the autumn as soon as the leaves commence falling, and replanting in firm soil of a rather strong calcareous nature, insures not only a good setting, but also certain swelling and stoning of the fruit.

This we advise in your case, with the inducing of a sturdy short-jointed growth by well exposure of the shoots to light and air, and top-dressings of fertiliser of a phosphoric and potassic nature rather than nitrogenic, say superphosphate of lime five parts, sulphate of potash three parts and sulphate of magnesia two parts, mixed, applying 4 ozs. of the mixture per square yard at the time of pruning the trees or before starting into growth.

Treatment of Asparagus Plants in Second Year after Planting (G.F.O.B.).—We are glad our advisements have been useful to you, and we like bothering, so as to be useful to our readers. It certainly is not a good plan to allow the grass to be blown over, as it injures the



GYMNOGRAMMA SCHIZOPHYLLA.

plants when the grass is broken, but at the same time it hardly pays to stake the plants, and indeed we have not found it necessary in growing for market, or even home use on a rather extensive scale. It is certain the roots will run into the gangway between each bed (and all the better), and it is well to feed these with Mushroom-bed manure, not, however, bringing the alleys quite level with the beds, as this may cause water to lodge about the corms and induce decay, though this is not very likely, as the soil is of a rather dry nature. Do not allow the plants to seed, but strip off the berries as soon as they can be handled readily, seeding being an extremely weakening process. The plants are quite close enough already to produce good heads, and to crowd the beds with seedlings is a very bad practice. Yes, there are artificial manures that greatly assist Asparagus growth. One of the best is composed of nitrate of soda, 1½ part (lb. or cwt.); dissolved bones, 2½ parts; muriate of potash, ¾ part; dried blood, ½ part; and best quality kainit, 2 parts, mixed, applying 4 ozs. of the mixture (as soon as made) per square yard, or 7 lbs. per rod, or 8 cwt. per acre. It is best to give the top-dressing twice, say in March and again at the beginning of June, using, of course, half quantity each time. Next spring you may rely on good heads for cutting, but it is not good practice to cut too heavily the first season, and not later than the early part or middle of June. For autumn you could not have anything better than the Mushroom-bed manure, giving them a top-dressing of dissolved bones, 1 part; basic slag phosphate, 2 parts; and kainit, 3 parts, mixed, applying 4 ozs. of the mixture per square yard.

Journal of the Royal Horticultural Society (N. Dames, Holland).—Write to the Secretary, Royal Horticultural Society, 117, Victoria Street, London, S.W. The price of the Journal to non-Fellows is 7s. 6d. When writing, state that you wish the results of the Chiswick Tulip trials of last year.

Lilium candidum Diseased (T. S.).—The leaves, stems, and bulbs are infested by a fungus, *Sclerotinia* species, probably a form of *S. bulborum*, but only the early or *Botrytis* form is known, the ascigerous condition not being as yet determined, and even the sclerotia are not freely formed, though these occur on the affected bulbs occasionally, being blackish, and varying in size from a Mustard seed to a small Pea. The fungus often destroys the foliage without affecting the stem and buds, so that the plants flower and even grow out of the disease. In other cases, and yours is one of them, the fungus appears as yellowish blotches, turning brown or black on the stem, pedicels, and buds, destroying all or greater part of the top growth in spring or early summer, and they bear in damp weather an olive brown mould, the conidial or *Botrytis* form of the parasite, though sometimes a white mould also presents itself, and this bears conidia. The mycelium of the fungus passes down the tissues into the bulb, where the blackish sclerotia are formed, more especially at the crown and in the outer scales of the bulb. The bulbs are also affected with root mite, *Tyroglyphus echinopus*, probably due to the decay set up by the fungus. The absence of calcareous matter in the soil is probably the cause of the indifferent doing of the *Liliums*, and we advise your giving the bed a dressing of air-slaked lime and soot in equal parts by measure, applying $\frac{1}{2}$ lb. of the mixture per square yard, and pointing in lightly with a handfork. The rain will wash down some of the mixture to the bulbs, and they will profit by the dressing, whilst the parasites will be prejudiced. Indeed, we consider the plants would recover if left alone, though the roots are few and the growth indifferent. In order to prevent the spread of the disease by the diffusion of the *Botrytis* spores, the plants should be sprayed with potassium sulphide solution, 1 oz. of the sulphide or liver of sulphur to 2½ gallons of water. Dissolve the sulphide in a quart of hot water, then make up to 2½ gallons with cold water. The spraying should be repeated occasionally.

Names of Plants (D. M. L.).—*Dendrobium calceolus*. (K. W.).—1, *Ilex Aquifolium Hendersoni*; 2, shrubby *Spiræa* (send when next in flower); 3, *Coronilla Emerus*; 4, *Buxus balearica*; 5, *Daphne Cneorum*; 6, *Cytisus elegans*. (S. P.).—1, *Staphylea colchica* (the species *pinnata* is not so free-flowering, nor so handsome); 2, *Berberis Aquifolium* (near *napalensis*); 3, *B. A. fascicularis*; 4, *B. vulgaris*; 5, *Kerria japonica fl.-pl.*; 6, *Ribes aureum*; 7, *Anchusa italica*; 8, *Prunus chamaecerasus var.* (H. P.).—1, *Prunus Padus*, the Bird Cherry; 2, *Kerria japonica fl.-pl.*, see notes on page 328, April 18th, 1901. (Arthur Stall).—1, *Cypripedium Curtisii*; 2, *Vanda suavis*; 3, *V. teres*. (R. S.).—1, *Ornithogalum ursinum*; 2, *Saxifraga granulata*; 3, *Halesia tetraptera*, the Bell-flower tree; 4, *Exochorda grandiflora*; 5, *Hedysarum microcalyx*; 6, *Iris cristata*.

Next Week's Events.

Saturday, June 1st.—Royal Botanical Society's meeting; Société Française d'Horticulture de Londres.

Tuesday, June 4th.—Royal Horticultural Society's Committees, in the Drill Hall, Westminster; Devon County Agricultural Society at Torquay (3 days); Scottish Horticultural Meeting, lecture on "Pear Culture for Scotland."

Thursday, June 6th.—Linnean Society meets.

Phenological Observations.

MAY 31ST TO JUNE 6TH.

PLANTS DEDICATED TO EACH DAY.

31 Fri.	Four-spotted Dragon-fly.	Yellow Martagon Lily.
1 Sat.	Virginia Spiderwort flowers.	Yellow Rose.
2 Sun.	Common Red Poppy flowers.	Pimpernel.
3 Mon.	Spotted Flycatcher lays.	Provence Rose.
4 Tu.	Narcissi faded.	Indian Pink.
5 Wed.	Landrail first heard.	Three-leaved China Rose.
6 Thr.	German Irises in flower.	Common Pink.

Horticultural Education in Australia.—Information comes to hand showing that even in the thinly populated Western Australia horticultural colleges are in existence. We learn that recently the students attending at the Perth Technical Schools made a Saturday afternoon excursion, accompanied by their instructor, Mr. P. Wicken, to the estate of Mr. C. Harper at Woodbridge, who kindly allowed the class to visit his orchard. An instructive afternoon was spent in examining the fruit trees, and seeing the operation of budding Citrus trees. The system of irrigation carried out was explained, and information given as to the different varieties of fruit and the methods of cultivation. This is the first of a series of excursions which it is proposed to hold on Saturday afternoons and holidays, to illustrate practically the lectures given in the class-room at the Technical School.

Covent Garden Market.—May 29th.

Average Wholesale Prices.—Fruit.

	s.	d.	s.	d.		s.	d.	s.	d.		
Apples, cooking, bush. ...	5	0	to	7	0	Melons, each	1	6	to	2	6
„ Tasmanian, case	12	0		15	0	Oranges, case	15	0		25	0
Figs, green, doz.	10	0		12	0	Pears, $\frac{1}{2}$ case	9	0		10	0
Grapes, Hamburgh, lb. ...	3	0		0	0	Pines, St. Michael's, each	2	6		4	6
„ Muscat	4	6		5	0	Strawberries, lb.	2	0		3	0
Lemons, Messinas, case	9	0		12	0						

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.	
Artichokes, green, doz. ...	2	0 to 3	0	Leeks, bunch	0 1 to 0 2	
„ Jerusalem, sieve	1	6	0	0	Lettuce, doz.	0 6 to 1 0
Asparagus (Sprue Grass)	0	0	10	0	Mushrooms, forced, lb. ...	0 8 to 0 9
„ English, 100	1	6	2	0	Mustard and Cress, pnnt.	0 2 to 0 0
„ Giant, bundle	15	0	20	0	Onions, Dutch, bag	5 0 to 0 0
„ Spanish, bundle .	1	0	1	3	„ English, cwt.	5 0 to 0 0
Batavia, doz	2	0	0	0	Parsley, doz. bnchs.	2 0 to 3 0
Beans, French, lb.	0	9	10	0	Potatoes, cwt.	3 0 to 7 0
Beet, red, doz.	0	6	0	0	„ New Jersey, lb.	0 3 to 0 4
Broccoli, bush....	0	0	1	0	Radishes, doz.	0 6 to 0 9
Cabbages, tally	3	0	5	0	Rhubarb, doz.	1 0 to 1 3
Carrots, doz. bnch....	2	0	3	0	Savoy, tally	4 0 to 5 0
Cauliflowers, doz.	1	0	2	0	Scotch Kale, bushel	0 6 to 1 0
Chicory, Belgian, lb.	0	4	0	0	Seakale, best, doz.	6 0 to 8 0
Corn Salad, strike	1	0	1	3	Shallots, lb.	0 4 to 0 0
Cucumbers, doz.	2	6	4	0	Spinach, bush....	4 0 to 5 0
Endive, doz	1	3	2	0	Tomatoes, English, lb. ...	0 9 to 1 0
Greens, bush.	1	0	1	6	Turnips, doz.	2 0 to 3 0
Herbs, bunch	0	2	0	0	Turnip tops	0 9 to 1 0
Horseradish, bnch....	1	2	1	6	Watercress, doz.	0 6 to 0 8

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz. ...	12	0 to 18	0	Ficus elastica, doz. ...	9 0 to 12 0
Acers, doz.	12	0	24 0	Foliage plants, var., each	1 0 5 0
Aralias, doz.	5	0	12 0	Fuchsias	8 0 9 0
Araucaria, doz.	21	0	30 0	Geraniums, scarlet, doz.	5 0 6 0
Aspidistra, doz.	18	0	36 0	„ pink, doz.	6 6 8 0
Azaleas, various, each ...	2	6	5 0	„ King of Denmark, doz.	5 0 6 0
Boronias, doz.	20	0	24 0	Hydrangeas, white, pink	9 0 12 0
Crotons, doz.	18	0 to 30	0	Lycopodiums, doz.	3 0 4 0
Dracæna, var., doz.	12	0	30 0	Marguerite Daisy, doz....	8 0 12 0
Dracæna, viridis, doz. ...	9	0	18 0	Mignonette, doz.	6 0 9 0
Erica, various, doz.	8	0	18 0	Myrtles, doz.	6 0 9 0
Euonymus, var., doz.	6	0	18 0	Palms, in var., doz.	15 0 30 0
Evergreens, var., doz. ...	4	0	18 0	„ specimens	21 0 63 0
Ferns, var., doz.	4	0	18 0	Pelargoniums	10 0 12 0
Ferns, small, 100	10	0	16 0	„ Ivy leaf	6 0 12 0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums, doz.	2	6 to 3	0	Maidenhair Fern, dozen	
Asparagus, Fern, bunch	1	6	2 6	bnchs.	4 0 to 6 0
Camellias, white, doz. ...	2	6	0 0	Marguerites, white, doz.	
Carnations, 12 blooms ...	1	6	2 0	bunches	3 0 4 0
Cattleyas, doz.	6	0	9 0	„ yellow, doz. bnchs.	2 0 3 0
Cornflower, doz. bnchs....	1	0	1 6	Narcissus Pheasant Eye	
Eucharis, doz.	2	0	0 0	doz.	1 0 1 6
Freesia, doz. bnchs. ...	0	0	0 0	Odontoglossums	2 0 3 0
Gardenias, doz.	1	6	2 0	Roses, Niphetos, white,	
Geranium, scarlet, doz.				doz.	1 0 2 0
bunches	4	0	0 0	„ yellow, doz. (Perles)...	2 0 0 0
Gladioli, doz. bnchs. ...	9	0	12 0	„ red, doz.	2 0 0 0
Iris, Spanish, doz. bnchs.	8	0	10 0	„ Catherine Mermet, doz.	2 0 4 0
Lilium lancifolium album	2	0	3 0	Smilax, bunch	3 0 4 0
„ rubrum	3	0	5 0	Spiræa, doz. bnchs....	4 0 6 0
„ longiflorum	2	0	3 0	Stock, white, doz. bnchs.	2 0 2 6
Lilac, white, bunch, ...	3	0	0 0	Sweet Peas, white, doz.	
Lily of the Valley, 12 bnchs.	8	0	12 0	bunches	4 0 6 0
Mignonette, English, doz.	4	0	6 0	„ coloured, doz. bnchs.	4 0 6 0



Out at Grass.

MANY of us who are picture lovers will know at least some of the works of Herring, who, we believe, was a Doncaster man, and the horse painter of his age—indeed, shall we say of his own age as well as of ages to come. There is one picture by him which has always been a great pleasure to us, "Hunters at Grass." Talk of beautiful proportions and glossy coats! You can feel the rest and repose of the picture, and you think with a sigh how much better their lot is than

yours. Treated with tenderest consideration from their birth, fed on the daintiest and most nutritious food, partaking during the winter in the sport of kings, and allowed in summer a sort of existence equalled only in that state in the fair Lotus land, where it is always afternoon. If Herring had been told that there would come a time when the correct thing was *not* to take off the shoes and turn out to grass during the summer months, he would have laughed a scornful laugh, and probably used strong language. What so good for strained sinews and summer humours as the cool green fields? In what other way would a hunter be made so fit for next November? Nowadays the field has given place to an airy loose box with plenty of green food supplied. The poetry is gone, and nothing but unadorned prose remains. By this present system there is less danger of accident, and the preparation for the winter campaign is less arduous; but of course more work is entailed during the summer, and a man is bound to have a very complete equipment in the way of premises.

A friend who is a very horsey man is in the habit of running up continually to town, and attends horse auctions with great regularity. He buys omnibus, cab, and carriage horses—some awful looking screws, most of them only suffering from "'ammer, 'ammer, 'ammer on the 'ard 'ighway." Having a grass farm these horses get the chance of a summer run, which is really often all the medicine they require, and folk would be astonished what a tidy bit of money may be made in this way. Our friend possesses two great gifts, a sound judgment and patience. Some of the horses improve so much as to be fit for the single brougham or the dogcart; others find their way to the various tradespeople who carry to our doors the goods we need daily; others again are put to work on the farm, and it is very seldom one is totally useless. We give these hints gratis to any of our horsey readers, and would suggest that if they live near London, indeed any town of much importance, they might spend some time worse than in attending a horse auction.

It is marvellous what this fresh spring grass does to stock. Look at the milk part first, and the first grass butter is a revelation. We are all of us beginning to think of a cream cheese; indeed a man told us yesterday he cared nothing for "berry pie till he had a bit of cream cheese with it." We often wonder, when butter sinks to such a low ebb in the early summer, that more of the farmers do not put a few cream cheeses on the market; or, if not cream cheeses, some of the soft varieties which the deft-handed travelling dairy teachers turn out. The hard cheese of the winter does not appeal to us now; we want something daintier to eat with our salads and Tomatoes. We were once very much amused by being asked at dinner whether we would take "shop" or "madam," the latter being the delicious home-made cream.

Poets have sung of the young lambs and the calves out in the green pastures, and spoken of their gambols as the poetry of motion; and the sight never palls. What is there more delightful than a ramble in the fields these quiet, calm evenings, when everything is looking at its very best? If we had to pick out the young animals we admire most, it would be the foal; but the young of all animals has a wonderful charm, seen at large, and under such favourable conditions.

We who have not very deep ground are beginning to long for a good shower. Eleven days of bright sunshine and high winds has done a good deal towards drying the land, and there is so much stock to be provided for. There is another class of stock on the farm that do doubly well when turned out to grass; but the grass must be fresh, that is, fresh to them. We refer to the ubiquitous fowl. None but those who have tried the experiment know what good it does fowls to take them clear away from the homestead to fresh fields and pastures new. In fowls that are laying it is useless to hope for great increase of eggs the first few days; they must be allowed to settle down first, and then you will reap your reward, not only in a fuller egg basket, but also in the better and healthier state of your flock. To anyone with a nice taste the difference in flavour of the grass egg is detected at once, and there is another point, the birds will require less hand food. There is a danger at first that a fowl, by excessive grass eating, may get crop-bound. That can soon be ascertained, and a small dose of the useful Epsom salts will put that matter to rights. As for young chickens, those taken out to the field, provided they are all right at the time of exodus, will never die of anything but an accident.

Many people now take their fowls out in portable houses to distant fields, and thus are enabled to bring up more poultry than they would possibly do were all kept at home. There are two arguments against this course, and rather potent. There is the trustworthiness of the biped man and the quadruped fox. To the honour of our race we do not often hear of fowl thefts; but, alas! what can we say of Master Reynard? He regards neither time nor place, and will always kill far more than he can consume; in fact the way home is generally littered with corpses. We have, to our sorrow, counted as many as twenty poor maimed bodies within as many yards. The master, when he thinks of his winter sport, may forgive; the mistress, never!

A worn out waggon with a rough thatched roof will make a capital roost; if the thatch be thick the place will keep cooler during the hot weather. The galvanised iron buildings get to feel like ovens, and no self-respecting fowl prefers to be roasted more than once, and that time in proper attire and in company with a bit of bacon. Remember, there is one thing that will be lacking in the field, and that is grit. We are more and more convinced that grit is as necessary as food. It really only is a question of a few minutes, for we know no establishment where at least a little broken crockery may not be found, and a hammer or flat-iron will soon reduce it to proper proportions. That it is needed may soon be proved by the way it disappears when laid down in the fowl quarters. Water, too, must not be forgotten. Most grass fields have natural watering places. When the water is supplied by a pump, not a trough, great care must be taken. We, under these circumstances, lost several fine fowls, till the idea occurred to us to place in the trough big stones; by so doing we saved many a venturesome fowl from a watery death. An old puncheon that has seen better days makes a good water vessel if sunk in the ground and partially filled with stones to prevent accidents.

Work on the Home Farm.

We have had a splendid week of typical May weather, bright sunny days with cool nights and northerly to easterly winds, sometimes reminding us of March. Fortunately we have had no frost, and the fruit trees must have had a favourable season for setting the bloom, which is now fading. It has been exceptionally beautiful this year, the amount of Plum blossom being very noticeable, especially as it has followed such an abundant crop.

It has been a splendid time for giving the land a last dressing with drags and harrows preparatory to ploughing for the root crop. Everywhere, that is, except on very strong land, which yet requires much more rain. A strong land farmer told us the other day that he had never been so badly in want of rain, and that he had clods in plenty as thick as his body. At present his root crop is more than a doubtful one, but after rain in sufficient quantity the outlook would be as fair as it now is gloomy. Farmers backward with work are now given a splendid chance to pick up, and anywhere that there is a morsel of twitch it should be worked to the top, when the sun and wind will soon kill it.

Where the land is clean and in fine condition we see no use in delaying the sowing of Swedes. Certainly Purple Tops of the Elephant and Monarch type would be better in and growing, so that they may be well matured for storing before Christmas. Dear as Swede seed is, the Purple Tops are much the dearest, which shows that they are less hardy than others, apart from their susceptibility to frost injury. There is a great run on Bronze Tops this season, Lord Derby, Favourite, and Golden Melon being all excellent types.

Though the weather has been favourable for getting on with work it has not been very good for the horses, and we hear of several cases of inflammation from chills contracted by standing in the east wind after being overheated in the sun. Men generally take a sack or two to put on the horses' backs when they stop for lunch, but if a rug were provided for each horse, and the farmer insisted on them being taken with the animals on all occasions, there would be many less cases of loss from lung complaints. Most men will see that rugs are used if they have them. Castration is now being successfully performed, the cool temperature being excellent. Care must be taken, however, not to let the colts get cold by too sudden exposure to the east wind until the swelling has quite subsided. Until then grass or Clover may be brought to them in the loose box.

Meat for Young Ducks.—Ducklings need meat or animal food in some form. James Rankin, the veteran Mass. duck raiser, feeds one part hard-boiled eggs and three parts stale bread crumbs the first three or four days. After that he gives equal parts wheat bran, corn meal, and boiled potatoes with a little beef scrap. A large duck raiser feeds equal portions of wheat middlings, cornmeal, crackers or bread crumbs, with green food for the first week. After this the ration is made of four parts cornmeal, two of bran, one of middlings, one of beef scrap, and about four parts green food. A handful of sharp sand is added to each quart of the mixture.

Golden Wyandottes for Farmers.—Like all varieties of Wyandottes, the golds are a utility breed and one of the best general purpose varieties in existence. The young chicks are hardy, always plump when fed enough, and ready to kill at any time after weighing $\frac{3}{4}$ lb. Unlike the Asiatic breeds, the chicks never get long and leggy. They have plenty of breast meat, short legs, and a small head and comb, so there is but little waste in dressing. As roasting fowls they are unsurpassed, and the most desirable market weights of 4 to 6 lbs. are easily attained. The pullets mature early and make good layers. They excel all other breeds in laying during the fall months. The eggs are of good size and of the dark brown colour so greatly in demand for the Boston market. The golden Wyandottes differ only in colour from the silvers in that they have golden-bay markings and lacings instead of white.

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Journal of Horticulture.

THURSDAY, JUNE 6, 1901.

The Fleur de Lys.



WHAT a pity it is that a name so pretty has fallen into disuse, and what a nice thing it would be if it could be revived, and applied, if not to all the Iris family, at

least to those the gardening folks of long-ago delighted in, and loved to

have in their quaint little gardens. As in the case of some other old designations,

there has been not a little discussion as to what flower the Fleur de Lys really was, whether the common white Lily or a kind of Iris, and it must be confessed that the question remains still somewhat obscure. Why, for instance, should critics assume that Chaucer had in his mind the Lily where he says of the Frere, "His nekke whit was as the flour-de-lys," when Iris florentina, in its whitest form, would meet the requirements of the case? or Perdita, when she wishes, in that most delightful of all floral passages, "for Lilies of all kinds, the flower de lis being one," should be thought, of all things, to be longing for the white Lily of the summer garden, when they are "flowers of spring" she craves? There is really no good reason for assuming, in either instance, that the Lily was intended. The difficulty of being absolutely certain will, however, be recognised when it is pointed out that old French writers treated of Lilies and Irises as members of the same family, and this fact was known to their English contemporaries, as may be seen in a passage in Markham's improved edition of the "Countrie Farme," where the Martagon Lily is stated to unfold its petals like the Fleur de Lis. The French original says it produces flowers of size and form "comme celle du Lys."

Bishop Douglas is so plain in his description that in his case there can be no question as to its identity: "The flour delyce furth sprede his heuently hew;" and when we consult our earliest writer on gardening, to wit, "Thomas Hyll, citizen of London," the same plant, Iris florentina, is



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intended. The roots, he informs us, are sweet-smelling, and the plant was cultivated for these as well as for its flowers, which, as in the case of the Rose and the Lily, were to be gathered before expanding. Of its popularity Hill says, "The Flouredeleuce is a floure well known to all persons, bearing leaves both bigger, flatter, and larger than that called the Sedge"—a statement, by the way, that disposes of the supposition that *Iris pseudacorus* is the Fleur de Lys, and is further of interest as demonstrating the fact that the people of the North of England, as well as Scottish folks, are correct in calling the wild Iris the Sedge, or "Segg" as it is pronounced. Like other common flowers, the Fleur de Lys was by no means confined to that one name. The most fanciful of its names is that of Spenser, which he employs twice in his poems, first in the "Faerie Queene," where he calls it the "sumptuous Belamoure" of the "Lilly;" and again in sonnet lxiv., in which, likening his love to a garden of sweet flowers, he mentions "Her snowy browes like budded Bellamoures." I know of no other instance where this name occurs. "Orris" is, however, a very common name, and further attests to the commonness of the white Iris. It is, of course, simply the latter word, or "Ireos" modified by everyday use. Garden Flags is one of the oldest names applied to *Iris germanica*, and for a very long time this species was almost solely familiarly so known, and this with *I. florentina* and *I. pallida*, the two latter being both used medicinally, are perhaps the oldest cultivated Irises.

The Spanish and "Portingale" Irises mentioned by Lyte were uncommon in his day, and it is somewhat curious that these (*I. Xiphium*) are found in French books as the true Irises. The deliciously sweet-scented *I. graminea* also appears as an early inhabitant of English gardens, though very rare, and following these at the end of the sixteenth century *I. Susiana*, with its noble, and withal strangely coloured blooms, created what we should now call a veritable sensation in the gardens of virtuosos. All these, and many more, including the Gladwyn and wild Iris, assumed, with some distinguishing designation, the old name of Fleur de Lys, but in the beginning no doubt that name was strictly limited in its application. And now why should not we revert to the old custom, and accepting *Iris florentina* as the type, extend to it and to the *Iris germanica* group, with *I. pallida*, the distinctive name of Fleur de Lys? and I think, if I may venture to say so, that it ought to be spelled as above, because I have repeatedly known it to be pronounced Fleur-de-lee, from a mistaken impression that the s in *lis* was silent. With "Lys" there could occur no mistake of this nature.

It remains that a few notes as to their adaptability to certain phases of garden treatment be considered. They are now not infrequently arranged along with shrubs in good-sized groups, but no doubt the best results are only to be reaped when they are cultivated in good garden soil. In borders of mixed hardy plants, when properly treated, they produce an effect of much value at a time of year when these borders are otherwise somewhat uninteresting. But they must not be planted in small scraps, but in bold masses, and so near the front of the borders as to show all their varied beauty of colouring and of form. When well done to, the most glorious of all these rhizomatous forms is *Iris pallida*, producing as it does numerous flowers expanded at one time on each stalk, but there truly is no cultivated kind but is beautiful. I find that they thoroughly appreciate each year in spring a slight dressing of rich soil scattered over and about the centre of the plants; and an occasional application of manure, fine dry pigeon dung being very suitable, is an effective aid to large and well-coloured flowers. Soot is another simple manure that suits them well. Large groups if treated thus each year continue in good condition for an indefinite period.—R. BROTHERSTON.

[The illustration of German Irises on the opposite page helps the reader, in the absence of real flowers, to judge of the exquisite beauty and "symmetry of mould" that characterises the German Irises. Surely we are correct to say that nothing now abloom in the hardy plant gardens excels, and few subjects match, those of this varied genus.]

School Gardening.

SCHOOL gardening is a subject that is now receiving a great amount of attention from an educational point of view, and it is one that may be fraught with considerable contingencies in its promising course of gaining greater application. Although to many it might appear as being an experimental effort proceeding from a sort of superfluous enthusiasm, in all probability leading to few practical results of enduring value, those who warmly favour the scheme may be equally confident of the permanent advantages to be derived from it considered in relation to the present scope of general school work. In this connection it will, perhaps, be generally conceded that no subject that has similarly occasioned the practical attention of the Board of Education involves more important prospective possibilities than the application of gardening to the curriculum of rural schools. Advancing from the first steps that have resulted in what is claimed as being a demonstration of the beneficial effect upon the growth and physical development of pupils, it will no doubt be afforded greater opportunities of becoming widely established in England and Wales, and may be destined to have further results than at the present time can be accurately foreseen. It is certainly much too wide a subject to admit of any attempt to justly measure results by anticipation, but there can be no doubt of some of the advantages to be gained by a judicious treatment of the subject at the commencement, within the limits of elementary practical lines, and carefully fostering it in its future growth and fruition.

In a few necessarily brief observations, it is not possible to do more than give expression to a genuine appreciation of a scheme that is expressly intended to impart to rural school life a greater growing interest in its surroundings, designed to encourage the pupils to acquire at least a good elementary practical knowledge of a subject calculated to afford them profitable instruction combined with pleasure. The thought of the tuition being able or likely to bring greater contentment, is worth cherishing, more if thereby they may be the better fitted in the future to contribute in a practical manner to a solution of a problem that has assumed rather large proportions as an awkward social puzzle difficult to disentangle or deal with successfully. It is a subject that requires no special pleading, for it to be received with favour by those who are in the best positions to furnish the most valuable help in extending the adoption of the scheme wherever it may be deemed to be desirable.

The endeavour to make village life more interesting, and therefore more attractive to the sons of those engaged in agricultural work, is deserving of every attention and encouragement that can be bestowed on it. The "circular to managers and teachers of rural schools," issued by the Board of Education as far back as April, 1900, evinces the official interest that is being taken, and may be approvingly referred to as indicating the scope of the work sanctioned for the purpose of "encouraging the children to gain an intelligent knowledge of the common things that surround them in the country," and to "train them to some of the practical dexterities of rural life." Included in the work to be done outside the school walls the Board of Education attaches considerable importance to that of the cultivation of a school garden, and it is in respect to this more particularly that the greatest interest will be evoked. It may be frankly admitted that it is precisely the point at which questionings naturally arise. Practical men whose lives are full of the best experience will estimate the value of the scheme by the quality of the teaching and the method adopted of imparting it to the pupils, and they may consider that anything like a stereotyped plan as being not altogether applicable to the varying conditions under which it is hoped to prove successful. A school garden for educational purposes is undoubtedly an excellent adjunct to the school-room, but theoretically considered as a means of teaching the art of gardening it may be found practically to have a similar relation to that of a school drawing class to a school of art. Opinions, of course, may differ as to the correctness of this view, but the most sanguine well-wishers of the scheme may do well to bear it in mind lest danger to the progress and success might arise from undertaking more than could be satisfactorily accomplished within the limits of the means at their disposal. The concluding paragraph of the official circular previously referred to urges "teachers in rural schools trained in urban centres, whose previous education has not enabled them to obtain a full knowledge of the main principles and phenomena of rural life and activities, to attend such holiday courses and classes as may be placed within their reach for this purpose by county councils or other local committees." This forms an important suggestive appendix to the circular, and gives rise to a host of practical reflections.—J. E. JEFFERIES.



TYPES OF GERMAN IRISES.

Hardy Flower Notes.

Here then O June, thy kindness will we take.—*William Morris.*

WE have parted sadly from the flowers of the early months with all their sweetness and fresh beauty. We remember them only as we remember the bright visions of the night, which are swept away by the dawning day with its stern realities, softened, however, by the sunshine and the brightness, which give their gladdening light to dispel the sadness which comes into the happiest life. They have gone, but they may return, and we have now their successors whose beauties appeal to us, if not to forget, at least not to mourn for those who have gone away. The Letnean Poppy, as Virgil calls it in the "Georgics," has come in many forms to charm or soothe us into forgetfulness of the departure of spring. There are Welsh Poppies (*Meconopsis cambrica*), both single and double; there are Iceland Poppies (*Papaver nudicaule*), in white, and yellow, and orange; there are great Eastern Poppies (*Papaver orientale*), with gorgeous flowers of enormous size and brilliant colours; there are Hairy Poppies (*Papaver pilosum*), of evanescent beauty; and there are the salmon-coloured flowers of *Papaver rupifragum*, all bringing their bright flowers; while a day or two will give us also the Shirley and other annual Poppies from self-sown plants. Then there are the interesting and pretty hybrids between *P. orientale* and *P. rupifragum*, the one named *P. ruporient*, while the other, raised by Mr. E. C. Buxton of Coed Derw, Bettws-y-Coed, is only known as Mr. Buxton's hybrid Poppy. The first is the lighter in colour of the two, and the second has traces of the black blotch which exists on the Oriental Poppy, one of its parents. Both show a white or whitish base. They are good flowers, as well as interesting from their hybrid origin. Mr. Buxton's Poppy is said to produce no seeds, and although it has flowered here several times it has always been barren. *P. ruporient* is said to produce seeds, and to come true, when raised from these, as well.

Heucheras seem coming into favour, and several are in flower. Among them are the pretty *H. brizoides*, which is prized alike for its graceful panicles of flowers, and for the beauty of its leaves; not far from it is the new *H. Zabeliana*, which is a good plant with large flowers of a pretty pinkish colour. I cannot, however, detect any difference between it and a hybrid *Heuchera* sent me by Rev. C. Wolley-Dod as *H. cylindrica* ×. Probably the continental raiser who produced *H. Zabeliana* has secured it from the same cross. It is a good and apparently free-flowering plant. It is fortunate that few of the *Heucheras* which are coming into favour are so shy in blooming in most gardens as the charming *H. sanguinea*.

Bulbous plants are not so plentiful at this season as they were a little time ago, as the time of the Lilies is not yet come, nor have the Spanish or English Irises come into flower. Not that they are unrepresented, but we miss the showy Tulip, which has done us yeoman service this year, though cut down too soon by bright sun and drying winds. There are other bulbs, and among them some of the *Brodiaeas*, with flowers of blue, of purple, of lilac, of white, or of yellow. I have a liking for the yellow *Brodiaeas*, and, so far as I can recollect, have never remarked upon the beauty of one of these, *B. Hendersoni*, at present in bloom on one of the rockeries. It is a pleasing plant, with its flowers arranged like those of *B. laxa*, but of a pretty yellow striped with purple. It is easily grown on a light soil, though one finds that it wants a little covering for the first winter or two—a wise precaution with many newly planted bulbs.

One who has a liking for the pretty, if not showy, *Armerias*, or Thrifts, is naturally desirous of trying the new species which come before the flower-loving public, and one was thus pleased to make the acquaintance of *A. majellensis*, which I have just had the pleasure of seeing in flower on one of my rockeries. It is a pretty little plant, with a low-growing habit, so far as regards its foliage, but more ambitious for its small pinkish flowers, which it displays on long slender stalks. *A. majellensis* is not a plant for the many, and for effect cannot compare with our own *Armerias*, but it is one which will be appreciated by the grower of alpine. It is an Italian species, and Boissier seems to be the authority for the name. For dry, sunny places we have no prettier things in their time than the *Helianthemums*, or Sun Roses. There are a good many in flower of various colours and shades, and of varying degrees of merit. One remarkably fine yellow form, which I picked up in an Edinburgh nursery a year or two ago, because of its name being one I had never heard applied to a plant before, and because it looked as if it would be good, although not then in flower, has proved a good investment. Its name is Balgreen, which is that of an Edinburgh garden, and it has very large, bright yellow flowers of excellent form. It is, if anything, a little more fugacious than a few of the forms of *H. variabilis*, but it makes up for this fault by its beauty. Mr. Hill-Normand's double yellow sport from the double red, with upright habit flowers, is also in bloom, and is a first class plant, far superior to the double yellow, which hide their flowers and seem ashamed of their departure from the ways of the single Sun Roses.

The rains we have happily had are bringing on the other flowers of the time, though some in bloom have been disfigured by the heavy downpours which came with the thunder, with which the drought departed; yet there are many unscathed, or but little the worse. The larger Candytufts yet hang white from the rockeries; *Cytisus scoparius* Andreanus yet gives its towering branches of crimson-brown and gold, though the big Spanish Whin beneath has lost its glory. The white Portugal Broom is a snowy mass. Roses are in the field, the old Blush Monthly giving us many of its shapely flowers, fragrant as is their wont. The Ramanas Roses yield some of their pretty flowers, and two forms of *R. spinosissima*, *pimpinellifolia*, and *altaica* give their flowers with the utmost freedom. Buds everywhere tell of the coming glories of the queen of flowers in other shapes. On the wall *Clematis montana grandiflora* is a sheet of snow-white flowers. Gromwells give blue or yellow flowers; Lupins raise their spikes of bloom, and the hardy "old-fashioned" Columbines have not bid farewell for the year. That constant succession, which is the charm of a garden of hardy flowers, is given by many other flowers in bloom, or showing by swelling buds.—S. ARNOTT.

The Fortingall Yew, Perthshire.

PROBABLY the oldest specimen of the common or English Yew (*Taxus baccata*) in these islands is to be found growing in the churchyard of Fortingall, a small and picturesque village in the Perthshire Highlands, situated about nine miles from Aberfeldy, the nearest railway station. Here hundreds of visitors sojourn every summer to view the magnificent mountain scenery and visit the various places of historical and natural interest. The chief attraction, however, even to the person uninterested in arboricultural or botanical curiosities, is the aged Yew tree, which stands to all outward appearance still fresh and luxuriant, a monument of the centuries. The quaint little parish church, which stands not far from the Yew, is also of considerable antiquity, being founded by St. Adamnan, or the Abbot of Iona, who was born 624, and died in 704. On the left of the church, enclosed by the wall surrounding the Garth burial place, is the tree of which I wish to state a few particulars.

It will be readily seen that the age of any tree such as this, is, for the most part, a matter of conjecture, but from facts historical and traditional, combined with the opinion of experts, a very approximate estimate can be arrived at. Supposing it to be contemporaneous with the founding of the church, we have thus at least twelve centuries of life for it. Baron Humboldt ascribed to it the astounding age of 2000 years, whilst the late Professor Sir Robert Christison, after a close examination of it, believed it to be over 2500 years. De Candolle, a well known writer on botanical subjects, born at Geneva, 1787, appointed Professor of botany at the university of Montpellier in 1810, was perhaps the first who drew the attention of the scientific world to this most interesting tree. Before his time, however, it had become an object of interest to British authors.

Pennant, when on a visit to Col. Campbell of Glenlyon, in 1769, saw it, and it then measured 56 feet in circumference near the ground. About that time, and afterwards, it became the prey of curio collectors, who surreptitiously used to chip pieces out of its then decaying trunk to manufacture into snuff boxes and other articles. During the eighteenth century it was, as has already been noted, in a state of decay, and it seemed then as if its term of existence was fast coming to an end; but strange to say, this very process of decay has been the means of starting this wonderful tree on a new lease of life. Early in the nineteenth century the trunk, owing to the decay in the centre, parted into three limbs, which fell to the ground until arrested by the wall enclosing the burial place of the Stewarts of Garth. Each limb on coming in contact with the soil took fresh root, and each of them are at the present time green and flourishing. The tree as now seen has the largest of these limbs lying back towards the north wall of the enclosure, the smallest of the three lying quite against the same wall. Another limb is half on the ground, in a direction south-west from the main limb, and is supported by a stone buttress erected at the time to prevent its falling flat altogether, and at the present time it shows signs of vigorous growth. The main limb has still a large part of the old trunk attached to it, at any rate a segment of the circle of its ancient circumference, with its minute rings, to tell their story of growth, and the flight of time since the old Yew tree of Fortingall was a sapling.

In the spot that once marked the centre of the tree, a fresh tree, now of considerable proportions itself, has grown, so that this famous old tree, like the eagle, has renewed its youth, with the result that the entire enclosure devoted to the tree and sepulture is now a mass of sombre dark green. Mention of the tree is made in many old local writings. Gazeteers and encyclopedias refer to it, and it is also described in old and new statistical accounts.—W. L., *Edinburgh.*

*Odontoglossum Rossi* var.

One of the most frequently chosen *Odontoglossums* suitable for a cool house is the species *Rossi*, whose persistency and reliability as a flowering *Odontoglossum* has become well known. It is a Mexican species of good habit, and was introduced to England by a Mr. Barker, who obtained it from his collector Mr. Ross, after whom it is named. It succeeds either in pots or pans, but plants upon blocks become exhausted in a few years.

judiciously watering as the leaves fall, and giving only sufficient in winter to keep the crowns fresh and plump, the plants may come through all right. The summer treatment is very similar to that for other *Moth Orchids*, though it appears to need even more moisture than these, at least in the atmosphere. Grown on blocks these should be lightly surfaced with sphagnum, and if this grows freely in summer it must be lightly clipped back in late autumn. It was discovered by the late Rev. C. S. Parish in 1862.

Cattleya intermedia alba.

This rare and pretty albino—exhibited at the Drill Hall on April 23rd—continues to turn up occasionally among importations, but unfortunately it is not of so vigorous a habit as the type. In several places it has flowered and grown for a short time and then disappeared by degrees. The same thing occurs with several of the albino forms, and I am afraid in many instances it is caused by allowing the flowers to remain too long. It is always interesting to see a rare flower, but in case of a weak specimen, when one is sure of



ODONTOGLOSSUM ROSSI VAR.

Phalænopsis Lowi.

This is certainly one of the prettiest of the dwarf *Moth Orchids*, and it is a pity it is not more tractable under cultivation. In its native home in Moulmein it loses its leaves annually in the resting season, and in order to follow this in our *Orchid* houses it is necessary to dry the plants rather more than they like. The resting season is, in short, the time they are apt to go wrong. On many occasions I have known a plant with three or four tufts of leaves in autumn throw up only one or two the succeeding spring, and this is very tantalising to the grower who has been nursing his plants carefully through the dull days.

It is safest to keep the plants well up to the light as late as possible in autumn, this consolidating the foliage and enabling each leaf to contribute its part to the swelling up of the crowns. Then, by

the variety, it is really better to pinch out the spike when it forms and allow the plant to gain strength.

Cypripedium Pearcei.

This pretty species is quite distinct in habit from all other *Cypripediums*, being very like a *Sedge*, from which circumstance it takes its earlier name of *C. caricinum*. In some places it has been found shy flowering, but this will not be the case if it is left alone and not repotted too often. At St. Albans it grows well on the rockeries in the *Orchid* houses, and as in such positions it can be left alone and yet always find fresh material, this should prove a suitable way of growing it. The flowers are very pretty, and the name *Pearcei* was given in honour of an *Orchid* collector who sent the plant home in 1863.—H. R. R.



Mildew on Roses under Glass.

THE atmospheric conditions that favour the propagation and development of this pest are, according to my experience, so directly opposed in some respects to those indicated by Mr. Shoesmith, page 343, that I have been induced to reconsider the question, fearing lest I may have formed erroneous conclusions. The temperature of a house or pit in which Roses are being prepared and forced during the autumn, winter, and early spring seasons must, of necessity, be comparatively cool; the ventilation during this period may also be considerably restricted with advantage. If, at the same time, the atmosphere be kept very damp, the conditions produced are precisely those which I have found conduce to the germination of mildew spores. They may not be conspicuous for a time, but the spores are present, and only require a slight increase of temperature to enable them to develop rapidly. Roses grown under such conditions will for a time make rapid and exuberant growth—too much so. As spring advances and the sun's rays gain power, free ventilation must of necessity be given. Then comes the crisis. The too luxuriant growth will not bear this free admission of air without injury, a check ensues, mildew seizes the favourable opportunity, and spreads rapidly. With a comparatively dry atmosphere during the early period of forcing, the plants will grow more slowly, less luxuriant, and more hardy, and when the time arrives when abundant ventilation must be given, the plants will not only bear it without injury, but they will be better able to withstand the attack of mildew. If I could possibly prevent it I would not allow a drop of water to be spilt on the floor of the house during this early period of forcing, fully believing that the moisture arising from the damp soil in the pots or borders would be more than sufficient to produce the requisite amount of atmospheric moisture, until the period arrived when the increased power of the sun necessitated free ventilation, and the consequent increased evaporation rendered the damping process necessary.

Mildew will germinate in a damp, cool atmosphere, but it cannot do so in a cool dry one. Roses will grow luxuriantly, and mildew will germinate and develop, in a comparatively cool atmosphere holding in suspension 85 to 95 per cent. of moisture, while in a similar temperature, if the atmospheric moisture be reduced to 65 to 85 per cent., the plants will grow slowly and sturdily, and in such an atmosphere mildew cannot flourish.—I. CHALLIS, *The Gardens, Wilton House.*

Ornamental Species of Roses.

WITH the introduction of so many beautiful trees and shrubs into our gardens during the last few years we could not have been much surprised if the Rose had lost a little of its popularity, and had not been grown on quite such a large scale as formerly. Instead of this, however, it has steadily increased in favour, the only noticeable difference being that the perpetual flowering Teas and Hybrid Teas have, in many instances, supplanted the more shy blooming Hybrid Perpetuals. In another direction we also see the Rose used on a greater scale than heretofore—that is, in the cultivation of the many rambling semi-double forms, of which Crimson Rambler is such a good example, and in the semi-double bushy varieties, of which the rugosa hybrids are among the best. In addition to these there is yet another group, composed of the most ornamental of the various species, which is gradually creeping into our gardens, and making for itself a wide circle of friends. The majority of these species are very old introductions, a few are of recent date, but the greater number are comparatively rare. Though from a florist's point of view they may not be of so much use as the H.P.'s and Teas, they are in their own place quite as useful, as they can be grown for a number of years in places where the highly bred varieties would soon degenerate, and probably die. Grouped with other subjects in the shrubbery their effectiveness is at once recognised, dwarf species making masses of colour in the foreground, while taller growers add colour and brightness to distant parts of the border. The more compact habited ones are also allowable on the borders of the lawn, few things being prettier than a bed of *R. lutea* or *spinosissima*.

Then the stronger growers may be placed in the wild garden, plantation, or park; or may even be employed for undergrowth where dense cover is required, and in addition to fulfilling a useful purpose, add grace and beauty for a period of several weeks while in flower. The free-flowering qualities and beauty of the Dog Rose are well known, and the same effect can be produced by at least thirty other

species. Nor is the flowering of these plants their only recommendation, for the majority have another period of beauty in autumn, when covered with large crops of bright red or almost black fruit, and beautifully tinted yellow, green, and red foliage; for this reason alone we admit a number of shrubs into our gardens, but when the two qualifications are combined a stronger case is made.

Cultivation.

The cultivation of the species is of the simplest. Good stiff loam is their favourite soil, and this should be deeply trenched before planting. If at all poor, manure should be added while trenching, and, whether or not, a free use of rotten leaves will be found beneficial. When planting, plenty of room should be given, as they grow very quickly. Own-root plants only should be planted, the majority can be rooted easily from cuttings; others, the very spiny ones, such as *spinosissima*, for instance, being propagated by means of layers. An annual pruning will be found necessary in many cases. This should be done in winter, and should consist of thinning out, not cutting back shoots. At the time of pruning the stronger shoots of *lutea*, *spinosissima*, and other dwarf growers may be pegged down to fill up vacant spaces. This pegging down also improves the appearance of a group when in flower, as the growths are not then so much of the same height.

Of species there are close on 100 to select from, but of these about twenty-five can be selected as superior to the others. They vary considerably in height and habit; some, as *Wichuriana*, being but a few inches high, with long, rambling shoots; others, such as *spinosissima*, making dense bushes 2 feet or so high, with stunted branches; others, again, such as *moschata*, assuming almost a tree-like habit, rising to a height of 15 or 20 feet, while still another set, represented by *rugosa* and *multiflora*, make large, dense bushes 6 or 8 feet high. I will refer to other species in an article to follow.—W. D.

Tulipa in Birmingham.

Apropos of the recent Tulip exhibition held at Birmingham, I enclose you cutting from the "Birmingham Daily Post" by Mr. Shorthouse, whom I met at the show, and which I conceived might interest readers of the Journal, including also a contemporaneous letter to myself on the same subject. My enthusiastic friend was highly delighted once again to have the opportunity of witnessing a Tulip show at Birmingham, and commented most pertinently upon the properties of the flowers, also of comparative formula adopted by the experts of the present day with that of half a century ago in judging the exhibition or florist Tulip.

THE CULT OF THE TULIP.

SIR,—There are but two Tulip shows on record in Birmingham for forty-nine years until the visit of the Royal Tulip Society at the Botanical Gardens this afternoon. The first was on Thursday, the 27th May, 1852, in the Birmingham Town Hall. There was some excellent music, I fear attracting more attention than the Tulips. The second Tulip show took place on the 24th May, 1874, at the old Aston Lower Grounds.

The great grower of Tulips—Henry Groom, once of Clapham Rise, London—sold off his huge collection, some 30,000, in November, 1855. But in 1854 the late Charles Turner of Slough gave £40 for the stock of a Tulip called Samuel Hardy, and as late as 1874 £80 was declined for the stock of another called Proserpine. The Tulip seemed to "go out" of vogue about 1880, just about the date when "old china" and "croquet" also "went out."

The old hobbies are, however, "coming in" once more; our game croquet has arrived; old china is reported "on the road," and some even tremblingly fear that the 1860 crinoline may yet insist upon returning. We all shudder at the very word "crinoline," but I think our cordial thanks are due to the Royal Tulip Society for their missionary efforts in attempting to introduce again their lovely flower to the Birmingham public.

I grew the flower as one of many hobbies—the first—from 1856 to 1875, in Calthorpe Road. When in bloom the beds, covered with canvas and hoops, resembled a gipsies' encampment. It preserved the Tulips for some two or three weeks. Unhappily several, no doubt well-meaning, cats at Edgbaston thought these tents were intended by a philanthropist for a night shelter for them, and the "situation became strained."

I notice many of the old "prize" Tulips of fifty years ago still hold their own at to-day's show as exhibition flowers; a few, indeed, are reputed to be eighty to one hundred years old. It seems a pity the old Tulip enthusiasts are dying out so rapidly.

E. SHORTHOUSE.
5, Charlotte Road, Edgbaston, May 23rd.

In addition to the foregoing relative to the cult of the Tulip around Birmingham upwards of half a century ago, it may also be interesting to enclose an extract from Loudon's "Gardeners' Magazine," vol. xiii., 1832, descriptive of a visit by Mr. John Claudius Loudon to Messrs. John Pope & Sons' nursery at Handsworth, near Birmingham, concerning the Tulip. "The Handsworth nursery has

been established only a few years in its present situation; but Mr. Luke Pope, the father of the present J. W. Pope, sen., was the founder of a nursery in the neighbourhood of Birmingham in the last century. The extent of the Handsworth nursery is not great, but there are several acres belonging to it in other situations, where fruit and forest trees are grown extensively . . . The articles grown at Handsworth are chiefly of botanical and floral interest. . . . Mr. Pope's father was long famous for his Tulips, and he declared on his deathbed that he had spent upwards of £3000 on them. The collection is now at Handsworth, and made a very splendid display on the first and second weeks in May last; we were shown some sorts for which £50 a root were given by the father of the present J. W. Pope, and others valued even now at £20 a root. Many of the finest sorts are beautifully drawn and painted by Mr. L. L. Pope, for the inspection of purchasers. Mr. Pope, sen., has travelled through the greater part of the United States, and has introduced a number of American plants." The L. L. Pope referred to is intended for Linnæus L. Pope, and several of the paintings of the Tulip are at the present time in the possession of Mr. John Pope, King's Norton, near Birmingham.—WILLIAM GARDINER.

Coniferæ.

ABIES excelsa, the common or Norway Spruce, is, no doubt, the best known of all the Firs, and bears the same relation to the Fir tribe as the Scotch Pine does to the Pine tribe. They both are extensively planted by the forester, but the Spruce Fir, equally with the Scotch Pine, lends itself for ornamental purposes. One advantage with this tree is that it will thrive in situations where many others would die. It likes a moist soil, and when grown as an ornamental tree it should have shelter. It is a beautiful and stately tree; the leaves are solitary, short, slightly arched, and of a dark green colour. When grown under conditions favourable to its development it is one of the handsomest of Conifers for the decoration of the park and landscape, and the natural beauty of the species is only fully developed when the tree stands alone.

Although the Spruce is not particular as to soil or situation, it should not be planted in very windy positions. It is often recommended for planting near to dwelling houses, and other buildings, as a protection from piercing winds. In such situations, however, it will not thrive; several cases known to the writer have proved miserable failures. Quite recently a friend remarked, "I am thinking of planting some Spruce Firs at the end of my house to keep off the wind." I advised him not to do so, but to plant the Austrian Pine instead.

The varieties of the common Spruce are numerous, some of which only attain a height of a few feet. *Abies inverta* is a pendulous form, the branches drooping almost close to the trunk. *A. Douglasi* is a fast-growing, magnificent tree, introduced by Douglas, whose name it bears. It is a native of North-West America, where it attains a height of 200 and even 300 feet. It was first discovered by Menzies in 1797, and was introduced by Douglas in 1825, cones having been sent home by him, from which plants were raised and distributed by the Royal Hort. Society. In some positions it is said the tree will form leading shoots 3 feet long in one season. I have seen young trees that have made 2 feet of growth in a season, but they were somewhat surrounded by other trees. It thrives best in ground having a moist subsoil. As a decorative tree it is one of the best; the foliage is of a pleasing green, and the leaves are about an inch long, but are not so plentifully produced as in some of the tall Firs. Thus the tree makes a very light and graceful specimen. There is a very interesting account of this tree in Veitch's "Manual of Coniferæ," and also a brief sketch of David Douglas.

Abies Albertiana, the Californian Hemlock Spruce, is a tall, graceful tree, attaining a height of 100 to 120 feet, with long flexible branches and flexible branchlets. It is named after the late Prince Consort. The better known Hemlock Spruce, *Abies canadensis*, is very similar in appearance, but only grows about half as high. This is supposed to be more fastidious as to soil and situation than *A. Albertiana*. I have found, however, the opposite to be the case. The leading shoots of *A. Albertiana* die when the trees are about 4 or 5 feet high. It is rather difficult to distinguish one from another, the leading shoots of both being pendulous; but while *Abies canadensis* forms a more bushy specimen, *A. Albertiana* makes longer shoots, and the branches are not so large. They are both desirable trees for ornamental planting. The cones of *A. canadensis* are smaller than those of any other Fir.

Abies pectinata, the common Silver Fir, is perhaps the best known of all the Silver Firs. They are rather more formal in their

growth than the Spruce Firs, the branches are horizontal, and the leaves are, generally speaking, arranged in two rows. On their under surface are two white lines running lengthwise on each side of the midrib, giving the leaves that silvery look from whence the common name is derived. The Silver Firs are not quite so hardy as the Spruce Firs, *Abies pectinata* being about the worst to manage in its young state. Late spring frosts often destroy the new growths and cripple the trees, so that no more shoots are formed during the same season. For ornamental planting it should have sheltered positions; the growth is very slow for several years, but afterwards it advances with a rapidity both in height and girth which is seldom surpassed by any species of the Coniferæ.

Abies Nordmanniana is a very beautiful and symmetrical ornamental tree. It is only regarded as a variety of the common Silver Fir, but is very distinct from that tree. The branches are rigid, and densely clothed with foliage of a beautiful, deep, glossy green. In this country the young plant is late in expanding its leaves in spring, whereby it is generally exempt from injury. It is acknowledged the hardiest Silver Fir introduced, and is said to grow well in almost any kind of soil. I find it thrives well in rather a light loam. *Abies grandis* is another beautiful tree, and one of the tallest of the Silver Firs, often towering to a height of 200 feet or more. It makes a very graceful specimen, the branches being somewhat more slender and less thickly set than in many of the Silver Firs, and thence the aspect is lighter and more airy.

Abies grandis is perfectly hardy, but is supposed not to thrive very well in the limestone formation. I planted a young tree several years ago, which is now growing into a fine specimen in a sheltered situation. *Abies Lowiana* somewhat resembles *A. grandis*, but is not such a graceful tree; the branches are more robust, the leaves uneven and stiff. It pushes its growth a little too early for our fluctuating spring weather, and accordingly suffers from low temperatures followed by scorching sunshine. There appear to be several names for this species; perhaps *Abies concolor* would have been more correct.—PINUS.

Walls in the West Countree.

No one who has visited the West of England and South Wales can fail to have been struck with the beauty of the old walls that abound there. Along the high roads they are spoiled by the dust in summer, but in the more out of the way lanes and bye roads they are always pretty and interesting. The plants established on them are not all natives; some are from seeds blown from adjacent cottage gardens, such as the white Arabis, or Snow on the Mountain, as it is popularly known. This is very common about the Mendip Hills in Somersetshire, and just now is very beautiful. The clumps do not spread so rapidly on the dry walls as they do in the gardens, and are consequently dwarfer and full of flower.

The green leaves of the Stonecrop form a fine setting for the brilliant yellow flowers, and the plants in such positions lose much of their stiffness. In shady, moist places the Ground Ivy, *Nepeta Glechoma*, is a lovely sight; the long procumbent shoots hang very gracefully, yet in rich profusion, winter and summer, and when covered with the tiny blue flowers are exquisite. If this were a rare exotic, what a rush there would be for it. Of Ferns, the wild Polypody and *Ceterach officinarum*, the Scaly Spleenwort, are among the most common, but the Lady Fern, and the black stemmed *Asplenium Trichomanes*, are even more beautiful. Of the latter I have gathered fronds 9 inches in length, like a miniature *Pellaea*, and in this form it is very striking. This needs plenty of moisture to attain its finest proportions.

Self-sown for generations, and perfectly at home, without a particle of soil other than that which collects in the mortarless joints of the walls, the Wallflowers are now at their best. Thousands of plants in all stages, from tiny seedlings to woody old specimens, may be seen in the red sandstone quarries about Gloucestershire, and the air is filled with their sweet perfume. One wonders what the larger patches of brighter green in almost inaccessible places are, and not until quite close do we recognise the young stems of *Honesty*. Its season is not yet, but in summer these patches will be a blaze of colour.

The Cheddar Pink is sometimes seen as a cultivated specimen, but on the famous cliffs from which it takes its name it can only be obtained after a dangerous climb. In the lower places it has almost entirely disappeared. These, and many other species, make a rambling tour in the neighbourhood very interesting to anyone fond of wild flowers. Each month has something fresh, so the interest never flags; but, as mentioned above, it is no use remaining on the main roads. The farther one gets from the railways and high roads the less likely is the place to be visited by those wretched despoilers of the countryside, the flower root hawkers, to whom nothing is sacred.—TES REMOS.

NOTES

NOTICES

Weather in London.—Thursday was a splendid day, and some heavy showers fell. These were welcomed, and more is wished for. Friday was "a grand growing day," to employ a technicality. Saturday and Sunday were somewhat uncertain, the former day being showery in the evening, though Sunday was fair throughout. Monday was duller and much cooler, but Tuesday was again bright and moderately warm. Wednesday (Derby Day) was very agreeable.

Weather in Ireland.—The climatic conditions for the latter end of May have been truly pleasant, the days warm with absence of rain; however, the advent of the present month has been variable, with a tendency towards ample rain, accompanied with sharp winds, just now. The rain has been wanted owing to the dryness of last month; if not persistent the outlook is otherwise satisfactory from the standpoint of produce.

Variorum.—Half an ounce of Lavender flowers and half a teaspoonful of powdered cloves make a cheap and delightful sachet. * * A Norfolk gardener has produced twin Cucumbers, growing from the same stalk and joined down the middle. * * We call attention to the Richmond Horticultural Society's Show on June 26th, of which further particulars are found on advertisement page ii.

Kent Fruit Prospects.—Everything points to a fairly good fruit harvest in almost every part of Kent this year. All growers are agreed, however, that the yield, as a whole, will be immeasurably below that of last year, when there were hundreds of tons of magnificent Plums, Apples, and Damsons which, owing to their poor market value, were allowed to rot on the trees. Should the weather continue favourable during the next fortnight or so, there will probably be an abundance of all kinds of Cherries. The prospects, too, of the Raspberry and Strawberry crop are all that could be desired. The Strawberries especially are showing remarkable blooms, and only some warm showers are needed to insure an ample crop. Damsons will be somewhat scarce. Nowhere will there be an average crop, while in some plantations there will be but bushels picked where last season there were tons. Plums promise well in some places, so do Currants, Apples, and Pears. After their last year's experience Kent growers say that they believe that this year the industry will bring them a far better return for their outlay, although the crop be barely an average one.

Irish Gardeners' Society.—The usual monthly meeting of this flourishing society was held on Thursday last; the chair was occupied by the president (Mr. O'Kelly), there was a large attendance of members. After the usual business was transacted, Mr. Hall (hon. sec.) read the minutes of the last meeting, dealing with the competition for a display of produce grown by the exhibitor, and carried in the hand, the range to be either flowers, vegetables, or floral designs. There were three prizes, the first of £1 being again given by a generous donor, Mr. Cottier. This competition aroused keen interest. After some time was devoted to the arranging of the floral exhibits, the judges awarded the prizes as follows:—First to Mr. Richardson, gardener at Abbeyville, Malahide (Major Cusack), with choice floral designs, a handbasket of white East Lothian Stocks, the centre being filled with pink Zonals, *Adiantum cuneatum* being likewise requisitioned; also a crescent and star, the ground composed of purple East Lothian Stocks, a row of buds just opening of Rose William Allan Richardson, and dotted o'er with *Adiantums*, supported on a stand, the legs of which were interlaced with *Smilax*. Second and third prizes were put together, as the judges considered two of the exhibits of equal merit, Mr. Ryan, Belcamp, Raheny, and Mr. O'Kelly. The former had a fine collection of late spring flowers; a feature was a bunch of Sweet Peas. The latter had a giant Cabbage (*Nonpareil*), Green Peas, and early Potatoes. Amongst the other exhibits Mr. Reid showed a specimen pot of the improved *Schizanthus pinnatus* (rosy pink, Veitch's), likewise Mr. Walsh *Pæonies*, *Pansies*, &c., recommended for a certificate of merit. Several new members having been proposed and seconded, their names were submitted to the council for ratification. After the usual votes of thanks were carried, the meeting shortly afterwards adjourned.—A. O'NEILL.

Victorian Horticultural Medallist.—At the meeting of the Scientific Committee of the Royal Horticultural Society, on Tuesday afternoon, Dr. Masters opened the proceedings by presenting to Sir George King of Calcutta the medal which, owing to his absence on May 7th, was not then formally given to him. In response, Sir George King expressed his thanks in a few well chosen words, which were warmly applauded by those present.

Lectures at Chiswick.—The Rev. Prof. G. Henslow, M.A., V.M.H., has arranged to deliver the following lectures at Chiswick on Wednesday evenings at eight o'clock:—1: June 12th, "Propagation of Plants without Seeds." 2: June 19th, "The Awakening of Buds and the Sleeping of Leaves." 3: June 26th, "How Plants Climb." 4: July 3rd, "Injuries to Plants by Smoke."—W. WILKS, Sec.

Monster Asparagus at Evesham.—The Mayor of Evesham (Mr. J. S. Slater) on Monday, June 4th, opened an Asparagus Show, promoted by a firm of root merchants, at the Evesham Town Hall. Mr. W. B. Childs, of Acock's Green, was the judge. Some Asparagus of very high quality and heavy weight was shown. The first prize for a hundred of the best quality was awarded to Mr. C. Faulkner, whose exhibit was the heaviest in the show, weighing 25½ lbs. It was sold by auction for 35s.; Mr. D. Print, of Mount Pleasant, was second with a hundred weighing 19½ lbs., which realised 25s.; Mr. R. Mason, of Haselor, was third, his hundred weighing 15½ lbs.; it was sold for 17s. In the competition for the heaviest hundred Mr. Faulkner was disqualified, as he had won in the other class, and the prize went to Mr. F. Warner, of Offenham, the weight being 22½ lbs. This, however, was of inferior quality, and only realised 4s.

The Fruit Season.—England does an immense business with the Azores, not only in Oranges and Lemons, but in Pine Apples as well. St. Michael, in particular, is becoming quite famous for the fashionable fruit, which was produced originally from British seeds, and now grows luxuriantly in the island without any artificial heat whatever, so that fortnightly shipments reach this country with the utmost regularity. Most of the Grapes in the market are forced Grapes from Worthing and other places on our South Coast. Consignments are arriving from Belgium, and supplies will come later on from Spain and Portugal. Lovers of Grapes will be gratified to learn that the luscious fruit is certain to be plentiful this season. Already one firm alone at Covent Garden receives every morning nearly 1000 baskets, each containing 8 lbs., and in the height of the season the quantity is more than doubled. Melons are entering the market freely from Jersey and Guernsey. Cherries are likely to be abundant, but the late rain in the South of France has not improved the condition of the fruit from that quarter. Spanish Apricots are shipped in boxes which fetch wholesale from 8d. to 1s. a box of twenty or twenty-four. In the orchard districts of Devonshire and Hereford the Apples may be scarce. Australian Apples have been delivered here in too ripe a condition, and prices have suffered accordingly. The early Strawberries with which the market is glutted mostly come from Brest.

Paris Horticultural Show.—The horticultural show in the Tuileries Gardens, Paris, on May 29th, opened its gates with great éclat. The President of the Republic paid an official visit, and other personages present were M. Millerand, Minister of Commerce, General André, M. Doumer, Governor-General of Indo-China, who took much interest in conversing with M. Lonbet about the colonial specimens exhibited. The executive decided to close the show, owing to a rain downpour, and forthwith stopped many more people from coming in. The work of rescue then began. Strong gardeners took their boots and stockings off, and began wading. The Rose tent had more water in it even than the main pavilion, but the court of implements came off the worst. There was 12 inches of water covering the entire area. The arrangement of the exhibits was carried out with excellent judgment, and the effect from the balcony at the end of the main tent was exquisite. Near the main entrance was a particularly good display of *Gloxinias*, *Begonias*, and *Cyclamens*, shown by MM. Vallerand Frères; M. Auguste Nonin also exhibited. The *Rhododendrons* sent in by M. Moser of Versailles were of perfect shape and infinite variety. The *Cannas* were striking for size and assortment. There was also a clump of an entirely new species of *Malmaisons*, known as *Celteta*, which have obtained the gold medal; they were marvels of size, and the recipient of the high distinction was M. Henri Vacherot. M. Vilmorin had an extraordinary show of large double *Calceolarias* and *Pæonies*. The exhibition lasted three days.

Irish Fruit Crop Crippled.—The storm that raged last week has all but completely destroyed the prospects of the fruit crop in a large area of the South of Ireland. The crop was a promising one, the trees being laden with blossom. The visitation is said to have swept the branches absolutely bare.

Rose Freak.—Toward the middle of last week we received from Mr. W. R. Raillem a remarkable Rose monstrosity. This we had hoped might be kept fresh enough to present before the Scientific Committee of the Royal Horticultural Society at their sitting on Tuesday, June 4th. Decomposition, however, made it necessary to expurge the glass of its interesting subject. Mr. Raillem describes the abnormality as "a remarkable freak in a bloom of La France Rose, an actual and perfect stem and bud growing from the midst of some small petals. Similar cases of abnormal growth are not uncommon in some flowers, or even fruits, but I never saw such a case in a Rose." The flower-petals formed a perfect "collar" to the slender stem, which was quite 4 inches in length, and would have grown on like any ordinary shoot. Perhaps excessive vigour was the cause.

Fruit Prospects at Barford Hill.—The fruit prospects in the open air at Barford Hill are wonderfully good; bush fruits are carrying heavy crops, Pears and Plums have set with exceptional freedom, and Apples promise to set equally well. I also noticed an excellent illustration of growing Strawberries in a barrel. The holes had been made about 9 inches apart round the sides, and a young plant inserted in each, as well as on the surface soil, early in spring. All the plants seemed to be nearly equal in vigour. Unlike other cultivators who adopt the barrel system, Mr. Jones makes no elaborate arrangements for watering or keeping the centre of the barrel filled with loose materials; he simply places 9 inches of drainage in the bottom, then fills the space with soil as in the case of a large pot, and he finds so simple a method answers perfectly.—VISITOR.

Appointment.—On Saturday, June 1st, Mr. W. F. Gullick of Halton Gardens, Aylesbury, became Instructor of Horticulture to the Hampshire County Council. Mr. Gullick lectured on horticulture for the Bucks County Council in 1898 and 1899, when his lectures were very much appreciated. He is very popular in the Aylesbury district, and although everyone who knows him will be glad to hear of his success they will be sorry to lose him. He was always ready and willing to give practical advice on gardening matters. On leaving Halton on Friday, May 17th, he was presented with a handsome dressing case by the men who worked under him, by whom he was very highly respected, as a token of their esteem and hearty good wishes for his future. The dressing case was mounted with a silver shield, on which was inscribed, "Presented to Mr. F. Gullick by the men of Halton Gardens, May, 1901."

Phenological Observations.—The observing and recording of Nature's phenomena opens a tremendous field for engrossment and application of one's energies. When many undertake to help, however, a marvellous amount of useful work can be accomplished. Stations are arranged for in all parts of the British Islands, and reports, after being carefully made during each month of the year, are posted up to headquarters. Mr. Edward Mawley of Berkhamstead prepares the final report of all the observations, and he it is who has sent us the printed pamphlet detailing the seasons of 1900. In this concise publication the year's phenomena are discursively compared and summarised, which furnishes exceedingly interesting reading matter. Those who are surrounded by country fields, and the usual composition of rural life and scenes, should find the report of value and instructive, besides being, as we have said, entertaining. Last spring was backward all over the land; and in that respect this spring but repeats its immediate predecessor. The summer of last year was warm in all parts of the kingdom. It will be remembered that a great change to extreme heat took place about July 10th, and this lasted for three weeks. Previously the prospects had led one to presume a very late harvest, but the opposite was the case. With these facts in our minds we may feel fortified, and in this country at least we must be patient, and take the idiosyncrasies of the weather clerk with equanimity. Numerous neatly prepared tables, including the date of song and migration of insects or birds seen at different stations, and their numbers, together with the state of crops, &c., in the different months of the year, are special features of the compilation. We do not know the price of the "Report," but application could be made to the author.

Horticultural Lecture at Thorne.—Mr. Thomas Reddington of the Yorkshire College, Leeds, lectured, on June 1st, to a good attendance of fruit growers in Mr. James Servant's garden on "Practical Gardening." Later in the evening, Mr. Reddington gave practical illustrations in Mr. Temperton's orchard on "How to Destroy the Pests which Infect the Fruit Trees without Doing any Injury to the Fruit." This is the third lecture of its kind given in Thorne this year, and there is no doubt that if the instructions given are carried out there will be very little rotten fruit in Thorne this season.

The Colchester Flower Show.—Owing to the site in Lexden Park being unobtainable, the Committee of the above Society have been compelled to abandon the idea of an exhibition in connection with the Essex Agricultural Society's visit to Colchester. The summer exhibition will, therefore, be held in the charming grounds at East Hill House, the residence of the Mayor of Colchester. In order to make the schedule suitable to the later date, several alterations have been rendered necessary, but the Committee did all that lay in their power to avoid the postponement, and it is to be hoped the members will so assist them in their efforts that the Society will not suffer. Forms of entry are to be returned to the Assistant Secretary, not later than June 22nd.

Fruit Prospects in Erin.—The prevailing impression regarding the fruit prospects is good, viewing all types of fruit. Outdoor Peaches in some quarters are likely to be a failure; nevertheless, I have noticed a fairly heavy crop in several gardens in widely separated areas. Such a percentage may not be true over a large district; report speaks unfavourably of this crop. Apples, Pears, Plums, &c., have evident signs of heavy crops. Gages, Cherries (always uncertain as a crop), are fairly promising. Strawberries look well. It is to be hoped that our cultivators will not overlook the point of thinning their trees, with the view to have finer and larger fruit. This is a point to be borne in mind, as growers here seem to forget immature fruit in quantity can always be discerned when the period of inspection arrives.

Mild Weather in Cumberland.—The mildness of the Brampton district is seen by the fact that Mr. J. G. Atkinson commenced to take up early Potatoes on Tuesday last from his gardens. The Potatoes have been grown in the open, never requiring to be covered during the whole of the season. There has not been such a show of fruit in the district for many years. The Strawberries were never so promising, as the entire blossom has escaped the frosts.

Sussex Weather.—The total rainfall for the past month at Abbots Leigh, Haywards Heath, was 1.32 inch, being 0.36 inch below the average. The heaviest fall was 0.39 inch on the 8th. Rain fell on seven days. The maximum temperature was 82° on the 29th, the minimum 34° on the 8th. Mean maximum, 65.25°; mean minimum, 42.09°. Mean temperature, 53.67°. May in mid-Sussex has been a dry, ungenial month. The mean temperature was up to the average only through bright sunshine. The wind was twenty-one days in the North, chiefly N.E., and was at times extremely dry and cold. Small fruits a fine crop. Apple and Pear trees that carried heavy crops, and suffered from drought last year, have no fruit this year, while trees that did not bear last year have full crops.—R. I.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1901 May and June.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
Sunday .. 26	N.N.E.	deg. 51.8	deg. 50.0	deg. 62.0	deg. 48.1	Ins. —	deg. 57.7	deg. 55.0	deg. 52.0	deg. 47.5
Monday .. 27	W.N.W.	60.9	53.9	71.0	40.3	—	56.5	55.0	52.0	31.8
Tuesday 28	S.W.	64.9	56.5	74.5	44.3	—	58.3	55.3	52.2	35.3
Wed'sday 29	S.S.W.	71.9	61.7	82.5	50.5	0.07	59.7	55.9	52.2	41.0
Thursday 30	S.S.W.	65.4	60.0	67.4	58.3	0.05	62.0	56.7	52.5	53.2
Friday .. 31	S.W.	59.9	50.8	70.0	57.3	—	60.5	57.1	52.9	55.5
Saturday 1	S.S.W.	62.4	55.2	70.3	46.3	0.02	59.8	57.2	53.1	35.6
MEANS ..		62.5	55.4	71.1	49.3	Total 0.14	59.2	56.0	52.4	43.1

Warm sunny weather with a few slight showers towards the latter part of the week. Total rainfall for May, 0.45 inch.

Hitcham Grange, Taplow.

HAVING had the pleasure of inspecting the garden at Hitcham Grange, the residence of the Hon. C. S. Irby, when the fruit trees were in full bearing, I was much interested in the well-trained trees, which Mr. D. Paxton, the gardener, succeeds so well with. The house stands on a hill, overlooking part of the pretty village of Taplow. Windsor Castle is also to be seen on a clear day from the terrace in front. Clematis montana is trained up the front, with Wistaria sinensis and Gloire de Dijon Rose growing intermixed on the west side of the house. A small conservatory adjoins the drawing-room, from which Tacsonias and Fuchsias were hanging from the roof, making a bright display. The side stages were effectively filled with Begonias, Pelargoniums, Fuchsias, and Ferns. The pleasure grounds are not extensive, but the lawn and tennis court are maintained in a clean and orderly manner. On the lawn is noticeable a fine Araucaria imbricata. The flower beds were chiefly filled with Begonias of various colours, and seemed perfectly at home. On one side of the lawn appeared some large beds filled with Mignonette, with seedling Gladiolus dotted among it; these looked very attractive.

Leaving the pleasure grounds and approaching the kitchen garden we passed under an arbour of Crimson Rambler, some yards in length, which was admired by all who saw it, and might be more freely used in gardens for such purposes. The kitchen gardens lie on a slope, and much labour is taken up during the summer months in watering the fruit trees and vegetables. The depth of soil is about 2 feet, with a bed of gravel and chalk under it; but the soil in this neighbourhood suits hardy fruit without a doubt by the examples found here. Peaches and Nectarines form one of the chief features at Hitcham Grange. Pears are also exceedingly fine, and before these were gathered last year they were a sight not easily forgotten. Not only are the trees splendid specimens, but the fruits were of the highest class. An idea can be formed of the Pear culture by the illustration of Pitmaston Duchess on this page, which had over 300 fruits on it. The lower part of the tree is shaded by a shed. This tree was planted some fourteen years ago, being grafted on the Pear stock, and for four or five years it grew very rapidly without carrying any fruit worth mentioning; so to check this, Mr. Paxton "rung" the stem, and kept the shoots well pinched during the summer, pruning close in. Since then it has always carried a good crop on a south wall, where it is planted.

Pyramid Pears are another feature, most of which were planted eight years ago, after a careful selection of varieties suitable for the district. These trees are pinched twice in the summer, and pruned close in at pruning time. Any that make luxuriant growth are root-pruned in October. Amongst pyramidally trained that were carrying heavy crops, I noted Beurré Diel, Beurré Giffard, Brockworth Park, Clapp's Favourite, Doyenné Boussoch, Duchesse d'Angoulême, General Todtleben, and Williams' Bon Chrétien. The best espaliers were Williams' Bon Chrétien, Louise Bonne of Jersey, Beurré Diel, and Marie Louise. Apples are equally as well grown as Pears, trained as bushes, pyramids, and standards, which carried

excellent crops of fruit. The chief varieties I noted were Alfriston, Blenheim Orange, Mère de Ménage, Peasgood's Nonesuch, Cox's Orange Pippin, very fine; Wellington, and Fearn's Pippin. Most of the Plums are grown on a wire trellis, facing the east, the following varieties succeeding well at Hitcham Grange:—Coe's Golden Drop, Green Gage, Jefferson's, Kirke's, Pond's Seedling, and Victoria. There is also a large Brown Turkey Fig on the coach-house wall, covering a space of 40 feet long by 20 feet high, and as many as a hundred dozen Figs have been picked off. This tree carries a good crop of fruit every year. It is planted against the hard drive, no soil whatever being near; but on the other side of the wall is a farmyard, to which the roots have found their way, and to this is accounted the enormous crop produced yearly. Another feature is a large bird-proof square, made of wire netting. In this is found all kinds

of fruits, with Strawberries planted among them, St. Joseph producing excellent fruit late in October.

The glass houses are not numerous, but suffice to maintain a supply of fruit and cut flowers through the year. In the vineries were finely finished bunches of well known varieties. Peaches and Nectarines had all been gathered. In the plant houses were well grown plants, flowering and foliage, for decorating purposes. A small collection of Orchids, chiefly Dendrobies and Cattleyas, were looking healthy. There are also two very fine specimens of Eucharis in one of the houses. The principal supply of vegetables are grown in the field, only the choice varieties being grown at home. Particularly fine was a bed of Onions of a variety which is a cross between Ailsa Craig and Giant Rocca, raised by Mr. Paxton, which he considers an improvement on Ailsa Craig, a better keeper, and more hardy. The bulbs are rather flatter than Ailsa Craig, some of which measure 17 inches in circumference. These were grown from seed sown in boxes in January and pricked out.

The kitchen garden in general was well cropped with vegetables, of which Peas had been particularly good during the summer. Mr. Paxton is a well known exhibitor at the local shows, both with hardy fruit and vegetables, and is fortunate

in having a liberal and encouraging master in the Hon. C. S. Irby. A cricket club is founded on the estate for the men employed in the garden, of which other young gardeners living near the estate are allowed to become members. Many, or most Saturday afternoons, a friendly game is played between them and other teams, when, through the kindness of the Hon. and Mrs. Irby, the visiting teams are invited to refreshments.—J. B., Bucks.



Webster,

PEAR PITMASTON DUCHESS.

Taplow.

Fruit Growing for Exhibition.

THE round of horticultural shows has already begun, and during the next four months both town and country life will be enlivened by the innumerable collections of garden produce brought together in various parts of the country. The great influence which such exhibitions have in fostering a love of the "most ancient of all arts," and in setting a high standard of merit, is indeed incalculable, for without them that keen interest in gardening, which is still a

characteristic of English people, could scarcely have been maintained, nor could so high a standard of excellence have been attained in regard to garden products generally. The majority of successful exhibitors make a speciality of a few things, and close observation soon teaches them many necessary details of culture which are not noticed by those who give each crop less concentrated attention. To me the growing and exhibiting of fruits has always had a peculiar fascination, and I look back with pleasure to many contests in the "days of yore," and to the friendships begun amid the bustle of the show tent.

I will first deal with Grapes, and assume that the borders have been well made, or renovated if necessary, as these are matters upon which sound information is easily obtained. Neither should there be much difficulty in regard to thinning, as experience soon teaches the right distance apart at which the berries should be left. The great points to bear constantly in mind are, that when ripe the berries should just touch each other without being so crowded as to cause deformity; on the other hand they should not be so thinly disposed as to show the footstalks. Remember also that it is on the tops of the bunches

mulch with fresh horse droppings or partially decayed cow manure, and water thoroughly. I never like using the latter manure in a fresh state, because being so sticky it seals the border from air, preventing the sun from acting beneficially upon it, and leaves the soil sour.

Chemical manures are of immense advantage to the grower for exhibition, as they act quickly upon fruits of all kinds, and are great aids in securing fine colour and high finish. If borders have been dressed with bonemeal before starting the Vines, a manure formed of the following ingredients will be found an excellent one to use throughout the growing and ripening period. Fish guano, four parts; superphosphate, four parts; sulphate of potash, one part; and sulphate of ammonia half part. Use at the rate of 4 ozs. per square yard, when no bonemeal has been used add two extra parts of superphosphate. I have also used Ichthemic guano for Vines during the growing season with splendid results. Exhibitors usually experience a difficulty in getting white Grapes well coloured for early shows. Buckland Sweetwater and Foster's Seedling are the varieties usually depended upon until Muscats can be had in fairly good condition.



Webster,

Taplow.

HITCHAM GRANGE.

that looseness is the most likely to occur, and it is just at such points that the weakness is seen the most when the bunches are staged. For such reasons always thin sparingly on the shoulders of the bunches, as a berry or two can easily be removed if necessary later on. When the shoulders are loose matters may be considerably improved by coiling some of them round the main stem of the bunch and tying them in position. Beautiful shapely bunches may thus be formed—examples which look most unpromising before they have been "handled," but such work must be begun at thinning time, and have regular attention throughout the growing season.

In moulding large bunches tie up the main shoulders at two or three points, and if necessary every small cluster containing three or four berries. Treated in this way bunches which appear loose at thinning time will grow into a solid shapely mass. After thinning I like to give a thorough watering as soon as possible, provided the soil is fairly dry, because if fine berries are to be obtained the foundation must be laid by inducing them to enlarge as much as possible during the first swelling. It is, however, quite useless to water with liquid manure and feed in other ways if the border is in a sodden condition, or if the roots are inactive from other causes. Keep the border free from plants or manure until it is in the right condition for watering, then dress with chemical manure,

Either of the two former kinds should be planted in the lightest part of an early house, each Vine having a space of 4 feet allowed for it, and the main laterals arranged 15 inches apart. A good amount of light will then reach the bunches throughout the growing season (if sub-laterals are kept regularly removed), and the berries will show a tinge of colour before they have swelled to their full size. When ripening has fairly commenced it is then an easy matter to tie back a few leaves to expose the bunches to fuller light. This must, however, be done by degrees, or the berries will become "browned" and disfigured on the most exposed side. In the case of Foster's Seedling I never like to give full exposure, as it has the effect of causing the berries to become dull and clouded in appearance instead of bright and transparent. A few leaves can, however, be tied back, leaving a thin canopy above the bunch. To get Muscats ripe early it is necessary to fully expose the berries, and if slates or pieces of black board are fixed at the back, the process is hastened by providing an attraction for the sun's rays. All white Grapes, however, which are hastened by such means, show a bright tinge of colour on the upper surface and a greenness at the base of the berries. Those coloured more slowly by partial exposure are evenly coloured throughout and clear.—H. D.

(To be continued.)



Narcissus Lucifer.—This is one of the most superbly beautiful varieties of *Narcissus incomparabilis* that enthusiasts can point to. It received a first-class certificate when Messrs. Barr & Sons showed it before the Narcissus Committee on April 25th. It was one of Rev. G. H. Engleheart's seedlings, and the catalogue description of it is, "pale perianth and glowing orange-red cup, colour lasting well in the sun, very striking, a good lasting flower." Our illustration, on page 482, will convey a better idea of the form of this fine variety.

Flowering Shrubs.—*Rhododendrons*, *Azaleas*, *Rhodoras*, *Kalmias*, and *Ledums*, of our gardens, as well as the genera *Menziesia* and *Loiseleuria*, all belong to the tribe *Rhodoreæ*, of the natural order *Ericaceæ*. They are characterised by the scaly, cone-like buds, and the septicidal capsules. *Azaleas* are now included with *Rhododendrons*, from which they have hitherto been marked off by their usually thin and deciduous leaves, and by their flowers having five stamens instead of ten. These characters are not at all constant, and many intermediate forms are known. North America is the chief home of the *Azalea* and *Rhododendron*, although many species are found in India, China, and Asia Minor.

Dwarf Irises.—When *Iris cristata* is observed in its finest state, the refined beauty and charm of its pretty little slate-blue flowers, touched toward the centre with orange colour, render it unexcelled as a hardy rockery or border flowering plant. This is one of the dwarfest of the Irises, not growing higher than 4 inches or so. *I. Naomi* is another variety of the dwarf section; its flowers are sulphury-yellow. *I. biflorus purpurea*, purple-violet, is scarcely so attractive, nor has it the lasting qualities of *I. Peter Barr*. The two are much alike, however. *I. olbiensis alba*, 1 foot in height, is a beautiful creamy white; *I. lutescens statallæ*, 1 foot, throws up handsome white flowers; *I. lutescens aurea* is a good rich yellow variety, which, like most of the above, resulted from a seedling in the Long Ditton Nurseries. The latter variety is the dwarfest yellow among the dwarf Irises.

Dahlia Notes.—The Dahlia is an ornamental plant in its natural habit of growth, and does not need much hacking about. It may be taken safely enough as an approved fact that the less flowers there are permitted to perfect themselves on the branch the stronger they will come, consequently there should be no mistake in thinning the buds. It is necessary to allow the buds to advance far enough to promise a perfect bloom before removing any, or the best may be taken. Then, again, all blooms should be cut away with their stems directly they are over; this mode of treatment saves the strength for succeeding blooms. Stake the growth firmly, the stoutest stake should be from 2 feet to 4 feet up the centre, with others for the side growths, which easily break in a strong wind. Do not stop the centre growth unless it becomes unmanageable. Though the Dahlia delights in a rich soil, it is often ruined through being overfed, which induces a heavy growth of foliage but without much flower. Liquid manure is only required on poor soils when the plant has reached its full growth.

Hardy Plants.—The improved variety of *Aubrietia Campbellsii* is a very handsome subject for rockeries, or for massing on the top edge of dry stone walls. So grown, it depends over the coping, and furnishes a pretty curtain over what might otherwise be a very uninviting frontage. The *Aubrietias* are all useful for such a purpose. The deep violet purple *A. Dr. Mules* might also be noted in this connection. Few dwarf alpines are sweeter than *Tridentalis europæa*; it has double, rosette, sparkling white flowers, about half an inch in diameter, or less. As a free flowering subject under a variety of conditions it seems to be very successful and recommendable. *Lithospermum prostratum*, in a situation that favours it, produces its deep, glistening, sky-blue flowers all the year round; it should be planted towards the upper pockets, in a sheltered yet lightsome portion of the rock garden. The dwarf *Phloxes* are all very serviceable. *P. canadensis*, *P. lilacina*, and *P. divaricata* resemble one another; each produces gracefully raised flowers of a lilac or pale lavender shade.

Currants.—The White and Red Currants contain similar properties, both containing malic and citric acid. The jelly made from them is excellent in fevers. The fruit, according to Mr. Broadbent, relieves constipation and purifies the blood. Black Currant jelly, or as a drink with hot water, is deservedly prized for its usefulness in colds. It is laxative and cooling. The jelly has long been used for quinsy and sore throat. It should not be made with too much sugar, or its medicinal properties will be impaired. A teaspoonful two or three times a day may be given with advantage to children with thrush.

Arranging Flowers.—Here are several rules which should be observed by those who often arrange flowers:—Use plenty of foliage; put your flowers in very lightly; use artistic glasses; do not use more than two, or at most three, different kinds of flowers in one decoration; arrange your colours to form a bold contrast, or better still a soft harmony. The aim of the decorator should be to show off the flowers—not the vases that contain them, therefore the simpler ones are far preferable to even the most elaborate. Glasses for a dinner table should be either white, a delicate shade of green, brown, or rose colour, according to the flowers arranged in them.

Erica carnea and c. alba.—For spring bedding these two plants make very suitable subjects for this purpose, especially as they commence to flower early, and are over just before the summer bedding is commenced. To grow *Erica carnea* properly, there should be two growing beds, one from which to take the plants next year and the other the year following, as under this treatment much better plants are obtained than using the same plants every year. As soon as the summer bedding plants are taken up plant the *Ericas*, they need little attention. In the spring, after flowering, take the plants up and plant in a shady border deeply dug and manured. If any multiplication of plants is needed, it is best done now by division; of course the same plants will do every year, but more flower and larger plants are obtained by the above method.—W. H. R.

Solanums.—The genus *Solanum* is an exceedingly large one, numbering probably about 700 species; chiefly tropical, and especially South American. Many species contain more or less a narcotic alkaloid called solanine, so that they are somewhat dangerous. There are but two British species, *S. Dulcamara*, the Woody Nightshade or Bittersweet, the berries of which have sometimes proved fatal; and *S. nigrum*. *S. tuberosum* is the Potato plant, the tuber of which is the edible Potato. The small quantity of solanine contained in the tuber is entirely got rid of in cooking. Old tubers, when sprouted, contain a dangerously high percentage of this poison. The Potato plant has also some medicinal properties, being especially good for those who suffer from uric acid diseases—i.e., gout, rheumatism, &c. The tubers contain citric acid, potash, salts, phosphoric acid, starch, and water. Its native country is believed to be Chili. *S. Melongena* is the Egg Plant, the edible fruit of which often closely resembles a hen's egg in form and colour. Some fruits, such as that of *S. laciniatum*, the Kangaroo Apple of Australia, are wholesome when ripe, but poisonous when unripe. The same rule applies to many other fruits.

A Beautiful Pot Plant.—*Saxifraga Cotyledon* is one of the most suitable plants for grouping or for table decoration in cultivation, and we think is not so well known as it deserves to be. Although one of the easiest plants to grow we are acquainted with, requiring little attention when once it is potted, it is seldom seen in large establishments, where table plants are wanted in abundance and at all seasons. It is a native of the Alps, the flower stems varying in height from 6 to 30 inches, and when in full bloom it forms a pyramidal mass of snowy white flowers. Now is the best time to obtain a stock of this plant, and the strongest offsets should be obtained, which surround the parent in abundance at this season of the year. These, if potted in 3-inch pots in good loam, leaf mould, and sand, with an addition of lime rubble or pieces of sandstone, will grow this *Saxifraga* to perfection. Keep the plants as cool as possible in all stages of their growth, and the offsets regularly pinched off; when the 3-inch pots are filled with roots transfer them into 5-inch, in which they will flower. When the flower spike makes its appearance it must be securely tied, loosely, to a neat stake, and if the plant has had anything like fair play it will attain the height of 2 feet, therefore a stake that height should be used, as it is surprising the height they grow, and the rapidity with which the flower spike shoots upward. Manure water in any form may be given occasionally when the pots are filled with roots, which will have a beneficial effect.—J. S. A.



Table Decorations.

I HAVE been making inquiries, and can hear of no more modern manual than the one written by Annie Hassard so far back as 1840, and now only obtainable second hand from old bookstalls. Surely here seems to be a good opening for anyone with the ability. I am of opinion that a book on the above subject would be extremely welcome and would be eagerly sought after, since this particular branch of our profession is undoubtedly demanding more attention every year. I pen these few remarks, hoping our kind Editor will permit its publication, as it may meet the eye of some of our more enlightened friends that may take the hint.—G. H. C.

[We replied to a query on page 380, May 2nd, 1901, in which we referred to Miss Malling's book on "Flowers for Ornament and Decoration, and How to Arrange Them," which was published in 1862. This, we expect, is only obtainable second-hand.—ED.]

A Problem in Heating Solved.

THE friendly criticism of "Aqua" concerning this subject (page 417) is welcomed by me, because it is a matter which is fully worthy of being threshed out, and the more it is discussed the better pleased I shall be, as I was not so unwary as to rush into print before being "sure" of my facts. Let me assure "Aqua" that the practice of dipping pipes under a walk, and even of placing self-acting air pipes at such points, is by no means new to me, as even now I have keen recollections of lonely midnight hours spent in trying to force the water past such points. What, however, is new to me is the fact that notwithstanding the deep dips in Mr. Marsh's pipes the water circulates thoroughly. I am well aware that this is against all established theories, but "facts are stubborn things," and it is quite useless for my critic to assure me in so impressive a manner that "the water will never circulate down one pipe and up the other," when I have seen it done with ease. Contra to the supposition of "Aqua," only a very small boiler is employed to heat the water, and the circulation begins as soon as the water gets warm, and I question if it has ever been heated to anything like the boiling point. Mr. Marsh is quite prepared to show the boiler at work to "Aqua" or anybody else who likes to call on him at any time; and, personally, I am quite sure that anyone arranging hot-water pipes in exactly the same way as shown in the illustration given on page 378 need have no fear of the result.—H. D.

Grape Gros Maroc.

"R. M.'s" query is based on the failure of this variety when subject to the ordinary and commonly practised short-spur pruning. No doubt the variety does disappoint when so closely pruned, but it is not alone in this failing, and thus should not be condemned because of it. There are qualities possessed by Gros Maroc that certainly commend it to many growers, even though its quality is not equal to the homely Hamburg or the aristocratic Madresfield Court. From an exhibition or market point of view it certainly has a large claim, because of its noble berry and fine sloe-black colour, points justly emphasised both by Mr. Taylor and Mr. Kitley on page 418.—J.

HAVING had a fair amount of experience with this Grape, nothing surprised me more than "R. M.'s" note on page 395. Is this variety worth growing? is a question that has two answers. To the private gardener, who grows exclusively for private consumption, the answer is negatively; to the market grower and exhibitor, affirmatively. I have no fault to find with its non-cropping properties, as it stands, in my experience, overcropping far better than any Vine I know. I have seen rods on the spur system carry twenty-five bunches annually (this is under the average), and finish them well; but when once well coloured they ought to be cut, as they (the berries) soon become red. Apart from the outer appearance of the Grape, it is not worth considering, as its flavour is decidedly third-rate. Only once have I seen the Vine in question behave like your correspondent's, and that not nearly so bad; it certainly did break very strong, and the size and strength of "breaks" belied themselves, for it bore no great crop, a dozen bunches at the most; but it was grown under high cultivation, and, for the variety, in excessive heat. If "R. M." is a private gardener, with an employer who is fond of quality and not external showiness, I advise him to discard the Grape. Either grub out or inarch, for it is a fine "stock" Vine, and by inarching, a fruiting rod is obtained quickly.—W. H. R.

Root-pruning.

THAT is a remarkable statement for a fruit grower of Mr. Banyard's position to make (page 410), that fruit trees root-pruned too late "may die, or at best go to sleep," and it surely requires some explanation. If a tree has been so neglected as to be killed by root-pruning, the method the careful man would pursue would be to cut only a portion of the roots one year, leaving the others to be overtaken in future years, when no harm could possibly follow. The remarks as to permitting hardy fruit to hang to the latest possible moment to insure good keeping are exactly to the point. May I supplement the teaching by noting the fact that late Apples, if not too much damaged by falling, keep almost as well as those gathered from the tree? I know this statement goes against all preconceived notions, but it is true nevertheless.—B.

Potato Up-to-Date.

WHETHER Up-to-Date is subject to the vagaries "N. H. P." (page 351), writes of, according to my experience (and I know that I am not singular in this respect), Up-to-Date is about the most miserably flavoured Potato I ever had experience of, and this when grown from a good Potato soil, being a warm sandy loam, with a gentle fall to the south-west; quite the opposite, mark you, of "N. H. P.'s" "strong, clayey, and close holding land." I have often wondered what are the distinctions claimed for this much over-praised variety. A Potato that I can thoroughly recommend is Syon House Prolific. Whether this variety is subject to any "vagaries" I don't know; I never heard of any but the very highest encomiums passed upon it. My experience dates back from the year it was first sent out; then it was an "eye-opener," and it has increased in my estimation ever since. I depend upon this variety solely for my main crop. Syon House Prolific is a heavy cropper, quite free from attacks of disease, of very handsome shape, and, what is best of all, of super-excellence in quality.—A. YOUNG, Witley Court Gardens, Stourport.

Young Gardeners' Pay.

HAVING perused with great interest the remarks made on the above subject, I beg to offer the opinion of a modern gardener. "Old Boy" appears to me to be a real old typical gardener, and man who looks on his journeymen as so many children, and consequently treats them as such. [We do not think thus of "An Old Boy."—ED.] It is time, and I am pleased to note that young gardeners have at last awakened to the fact, that they are men, not serfs, to be driven at the will of some high-minded man, whose past life in the bothy would no doubt bear the strictest investigation. What has been, and is, in many cases, the lot of the journeyman? He is bound down to hard and fast rules, scarcely able to call his soul his own, working for wages far under that of the average labourer, expected to be of good address, and his profession demanding a good education. What reward? 16s. per week. Hours? from six, perhaps earlier during the summer months, until whatever time the kind-hearted master thinks proper to allow one to leave off. If the said master sees his young men going out for enjoyment, what is the result? It will then be said that that young man takes no interest in his work; he must not smoke when walking through garden, or hold conversation with the labourers, or even smile at his fellow journeymen in working hours. Why does "An Old Boy" class the labourer with the professional gardener? Is the garden labourer a more skilled man than his brother the farm labourer? I am afraid "An Old Boy" is trying to pose as a benefactor, but do not think the many journeymen who peruse his well-meaning paragraph will accept him as such. "An Old Boy" refers to the youth's love for more money; but what youth of the present day is not that way inclined? There is not much of the "bright young journeyman" about the youth who is not. As for the love of gardening being first and foremost in the hearts of youths, I think if the wages were £1, instead of the paltry 14s., there would be more real love. Surely it is quite time a champion sprang up to fight for the rights of the long-suffering journeyman.—MODERN THINKING GARDENER.

A Schedule Blunder.

MR. IGGULDEN, page 459, is evidently in a tight corner, and in trying to extricate himself obscures the question at issue, as was to be expected; moreover, he does not fight fairly when he quotes only half a sentence of mine instead of the whole. On page 418, line 15, my words read thus:—"There are plenty of other varieties to select the remaining eight bunches from, even if confining the class to any of the 'white' Muscat varieties." The words added to his statement, or part quotation, entirely change the meaning of the sentence in question, as regards the exclusion of Canon Hall. After this fact, why does Mr. I. introduce foreign matter about black Muscat, or other assumed varieties of Grapes, the imagined pets of the modern exhibitor? Or why concern himself and us about what Mr. Goodacre or other exhibitors may or may not show? After this let the public say who it is that "muddles." The facts of the case are as plain as a pike-staff to all except those who cannot, or will not, climb down gracefully, or own up to their

own mistakes. Personally, in this matter, I am simply acting on the defensive, and still maintain that I fail to see that any schedule blunder has been committed by the framers of the Shrewsbury schedule in class 73. In order to prove and clear up this imaginary error and original dispute—viz., the exclusion of Canon Hall only from this competition, let us examine seriatim the disputed clauses referring to class 73, and as printed in the schedule of 1901. There are only three clauses really affecting this argument—viz., firstly, class 73, "Twelve bunches of Grapes, in four or more distinct varieties, but not more than four bunches of any one variety." Secondly, "Each bunch will be judged on its individual merits, and points awarded as per R.H.S. code." Thirdly, "For the purpose of this competition, Bowood Muscat, Charlesworth Tokay, Tynningham Muscat, and Canon Hall cannot be shown as distinct varieties with Muscat of Alexandria." Now here we have all the information we need as regards the dispute and the erroneous and assumed idea as to the exclusion of Canon Hall from the competition. These clearly expressed conditions can only convey one common sense interpretation—viz., twelve bunches must be staged, not less than four distinct varieties must be staged, or in any number beyond four varieties may be staged, or in any proportion of bunches the exhibitor wills, providing he does not stage more than four bunches of any one variety; consequently, not more than four bunches altogether of the bracketed white Muscat varieties, which, as stated for the purpose of this competition, cannot be counted as distinct varieties. Therefore, in such case the remaining eight bunches may be taken from the whole field of Grapes on similar conditions, so as to make up the necessary three or more other varieties required. For instance, supposing one bunch of Muscat of Alexandria, one of Canon Hall, one of Bowood Muscat, and one of any other variety of white Muscat. These four bunches would, for this competition, only count as one variety when staged, neither could a bunch of any other white Muscat variety be added or permitted, neither could any more points be obtained by this competitor over another competitor who staged four bunches of all one variety of Muscat, each bunch being judged on its individual merits. Note.—The schedule does not say any of the above are synonymous or prohibited.

Doubtless the schedule authorities, from their past wide experience in these matters, thought it prudent, in the best interests of all concerned, to place some restrictions, so as to prevent after disputes or objectionable disqualifications about distinct varieties, and of confining the white Muscat varieties to their fair proportion of the collections of Grapes—viz., to one-third of the whole (four bunches only), thereby preventing any smart competitor from obtaining undue advantage by staging a preponderance of Muscats, which, according to the R.H.S. code, would each bunch count a maximum of ten points, whilst all other Grapes count nine points only per bunch; a further object being to make the competition as fair and as easy to enter as possible to all Grape growers, and at the same time to bring before the Society's patrons—the great British public—as wide and as representative collections of skilful British Grape growing, thereby showing samples of the very highest possible quality to be found in the whole world.

It is to be hoped that this apparent waste of printer's ink, in fighting so fiery but yet so bloodless a controversy, will bring about the desired result of bringing "good out of supposed evil," by drawing the opinions of the original framers of schedule and others, so as to ultimately bring all the competitors into line and unison in the fierce struggle for supremacy, for honour, and for the substantial prizes of such a popular class, offered again by this highly successful and enterprising Shrewsbury Society, a society whose well-wishers regret to find has been falsely accused of blundering and muddling their schedule.—W. CRUMP, *Madresfield Court.*

Notes on Aquatics.

THE spring of 1901 will long be remembered for its wintry and unseasonable weather. At a time when it is not unusual to have many spring flowers, and trees and shrubs putting forth the tender leaves and blossoms, we were enveloped in snow wreaths and the cutting, harsh winds of a real winter blizzard. Much work on the line of planting and renewing has, of necessity, been delayed, and will be crowded in with the detail of seasonable work that lately presented itself. Preparation for early summer work, taking time by the forelock, having soil composted and other materials ready for operation when the opportune season arrives, will enable us to make the most of the fleeting season.

It will yet be in good time, writes Mr. W. Tricker, in "The American Florist," to replant hardy *Nymphaeas* where they are overgrown and crowded, and intending purchasers should not defer planting till next season, because it is now getting late. There is much to be gained by planting hardy *Nymphaeas* even if the operation is delayed until after midsummer. I hope to demonstrate this fact by the condition of affairs at Buffalo this season. The present is a good time to plant hardy *Nymphaeas*. It is yet in good time to plant *Lotuses*, but advantage may be taken of starting these indoors, and good pot-grown plants may be had for June planting. Yet with the caution given from time to time through the Press, many persons insist on ordering these plants, or rather tubers, at an early date, and doubtless many will find that early purchased tubers, instead of making new growth, have turned black and show no signs of life, and are not likely to. *Lotus* tubers should not be transplanted until the weather is settled warm. If these conditions do not exist naturally, artificial means should be resorted to. Where planting is deferred till June it is better to secure pot-grown plants; these may be planted during June and early in July with good results.

It is now safe to risk tender *Nymphaeas* out of doors. The end of May or early in June is best. Those who have accommodation under glass, where the plants may be grown on until a suitable time for planting arrives, should secure plants at once. The same remarks will apply to *Victorias* unless ponds are artificially heated,

but more of this later. Do not overlook the planting of margins of ponds. The hardy *Bamboos* are increasing annually in demand, and deservedly so. After the severe winter experienced in this region, and the lack of snow or any protection whatever, they are now pushing forth new growth from the old canes, in spite of the fact that on many of these the foliage is sere and dead. In planting margins a very ornamental bush for this purpose should not be overlooked, and that is *Tamarix africana*. It is of irregular growth, inclined to be tall, especially in wet ground, but its graceful, feathery foliage and branches are most attractive and striking all the season, and in spring they are literally smothered with delicate pink flowers. The bushes should be pruned hard after flowering. Other marginal plants by far too seldom met with are *Acorus japonicus variegatus*, *Sagittaria japonica fl.-pl.*, *S. montevidensis*, *Typhas*, *Lythrum*, &c.—WM. TRICKER.

Macrotamia echioides.—This is a yellow flowered Boraginaceous member, very suitable for an open sunny pocket of a rockery. It grows laxly, but is robust and furnishes quite a profusion of cymes. The tubular flowers are deep yellow, intermediate between the golden and canary shades. It strikes from cuttings and can be planted successfully at any time.



NARCISSUS INCOMPARABILIS LUCIFER.

(See note on page 480.)

Brown Rot Fungus on Apples.

ON September 17th, 1900, I, in response to the request of an M.D. and F.R.C.S., of whom I have given name and place of residence to the Editor, inspected some Apple trees with fruit described as rotting on them, and this being the case, and somewhat of a phenomenon in Apples, I considered examples illustrative of the malady and the progress of the causing agent might usefully be depicted and referred to in the *Journal of Horticulture*. The trees were standards, about twenty-one years old, and occupied a sheltered position on the south side of (though some distance from) the residence. Soil a gravelly loam with a somewhat unctuous ferruginous subsoil and underlying stratum, incumbent on chalk with flints. The trees, evidently Flower of Kent, were laden with fruit, large, beautiful Apples, and yet the picture was marred by very curious fruits more or less all over the heads, which, though to me very picturesque and lovely, spoiled the utility appearance. Here and there were hanging apparently quarter-grown Apples, brown, shrunk, mummified, yet withal marked more or less with dense tomentose tufts, often in circles, fairy-ring-like, and in places confluent, white, an example of which is shown in fig. 1 at *A*. Half-grown Apples, browned, mummified, and with more distinctly white, fairy-ring outgrowths, were still more in evidence on the trees, and all over interspersed with the other fruit. An idea of such Apple may be gleaned from the specimen configured at *B*. Still more plentiful were browned, partly mummified, three-quarters grown fruit on the trees, which, having the fairy-ring white outgrowths more pronounced, were very conspicuous amid the full-grown and highly coloured Apples; this example is depicted at *C*. Truly, as the owner tritely remarked, the Apples were "rotting on the trees."

Many of the full-grown Apples had brown patches, usually one on each fruit, from which—a point in the centre of the patch and commonly at the side of the Apple, but nearer the stalk than the eye—the brownness increased all around, and these fruits are greatly disposed to fall off the trees. On the ground the brownness spreads rapidly over the surface of the Apple, and on the trees browned and destroyed tissues, the fairy-ring-like outgrowths of the fungus, soon appear, and are, in my eyes, very beautiful. Albeit, the affected fruit is quickly rendered quite useless, being browned, shrunk, and if dry, mummified.

The rest of the crop appeared unaffected by the parasite, but on many, in fact most, of the Apples, were brown specks, in some cases scarcely visible to the unaided eye, otherwise the fruits were very fine in appearance. These fruits, after being gathered and placed in the store-room, soon becomes brown all over, and is thrown away, sometimes before the outgrowths of the fungus have appeared. Of course in this I am guided by the experience of former years, the doctor's wife assuring me that the gathered fruits always rotted, and unless used as soon or very shortly after picking, were not of any value.

Clearly we may follow the whole course of the fungus in this instance. It began on the small, newly set, and swelling Apples. On these the summer spores, or conidia, were first produced. These passed to the half-grown fruit, and they in turn had the outgrowths of the parasite which affected the three-quarters-grown Apples. Then the three-quarters-grown fruit infested produced the spores which gave rise to the brown patches on the full grown Apples, and the action of the parasite caused the fruit to rot on the trees or in the store

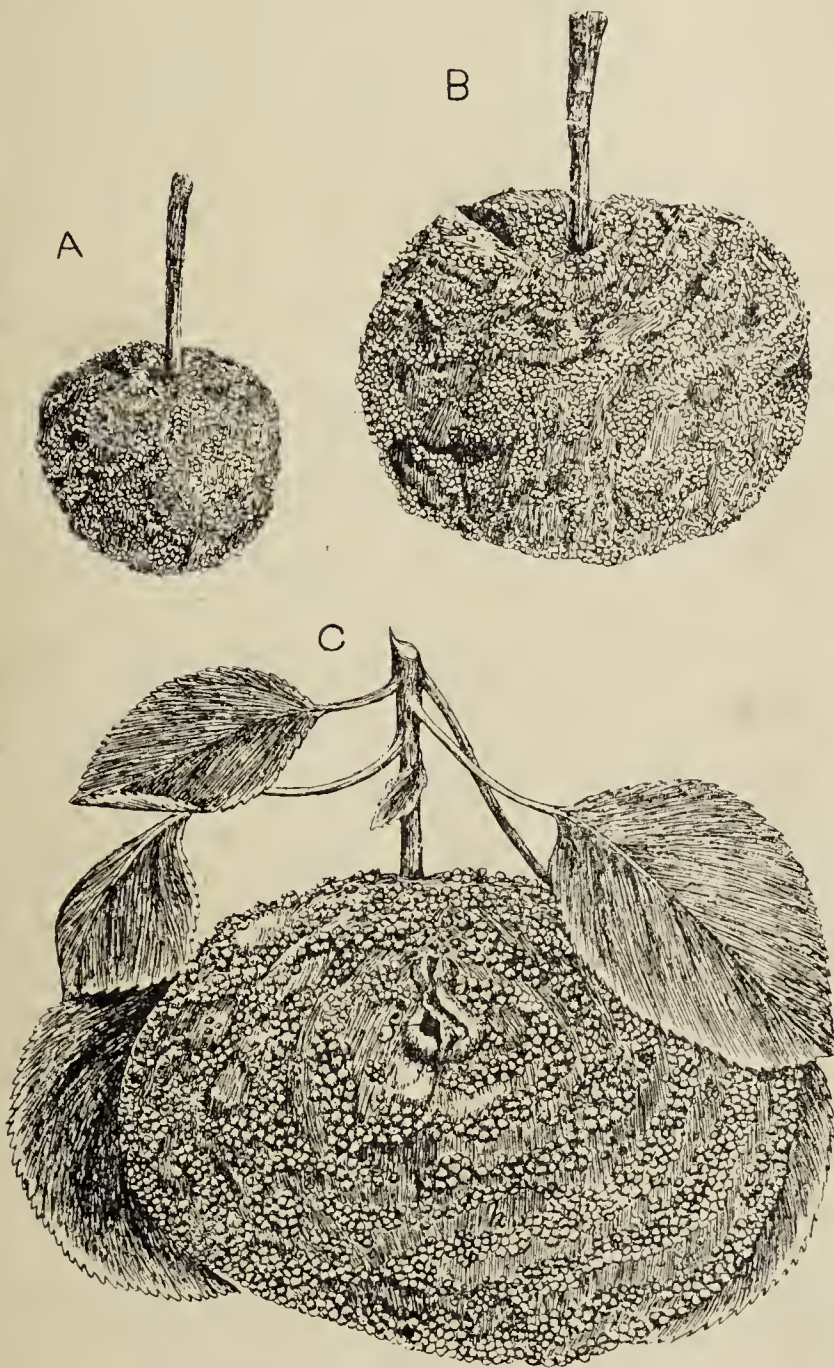
room. One point I wish to emphasise, namely, that on neither the quarter-grown nor the half-grown fruits affected, *A* and *B*, were there any summer spores or conidia, hence one may conclude that the summer spores or conidia are produced once only—a crop, and no more—from the diseased Apples, and on these there were not found any sclerotia (small, black, wrinkled bodies), the resting stage of the fungus. These are produced, however, at the approach of winter, and as a rule on the fruits latest affected by the parasite. Such Apples are either left on the ground where they have fallen, or those from the store room are thrown on the rubbish heap.

By the sclerotia the fungus passes the winter. In that form it is known as *Sclerotia fructigena*, the ascophore of which is unknown. In the summer, when the Apples are formed, the sclerotium pushes flask-shaped young mycelium, and on its short branches produces globose conidia or first spores. These somehow, and by a mysterious attrahent power, find out the host plant, and the particular part of it which affords the needed subsistence. The spores come to rest on the young fruit, push germinal tubes, enter the tissues of the Apples, and anon dense tomentose tufts, after growing in circles and becoming confluent, appear on the surface of the affected fruits, the white parts bearing, on branched hyphæ, elliptical or lemon-shaped conidia or summer spores—*Monilia fructigena*. These spores continue the infection in "fresh fields and pastures new," and finally the sclerotia or resting stage is reached. The life history of the fungus is thus a very simple one.

What do I advise in prevention of brown rot fungus? The first essential to success in combating this parasite is to pick off all infested fruits and burn them, and continue this, whether on the trees or off. The fruit must not be allowed to rot on the trees, lie on the ground, or be thrown on the rubbish heap. All should be carefully collected and burned. As the spores from infested fruit are scattered far and wide, some will adhere to the trees, even until the following spring, when they apparently have the power of germinating, but how they manage to transfer themselves to young fruit is beyond human comprehension, for the case is altogether different from leaving mummified fruit on the trees wherein the mycelium may remain in a dormant condition during the winter, so that in the spring, during warm and damp weather, this mycelium may produce a new crop of spores, which, being scattered everywhere, may develop in the blossoms and young leaves, and is often an unsuspected cause of the fruit not setting,

especially in stone fruits, and possibly also in Apples and Pears. Early treatment is, therefore, imperative. It is well to observe that the Apple foliage is more susceptible to injury by a fungicide than many other fruits, and that Bordeaux mixture is still the most potent of fungicides, though for the Apple it must be dilute. A safe mixture is formed of 1 lb. of copper sulphate and 1 lb. of freshly burned or quicklime to 12½ gallons of water. It is well, however, to err on the safe side, hence use the mixture at half strength at the first two sprayings. Spray first before the blossoms open, then, as soon as the fruit is well formed, spray again, and repeat the application twice later at intervals of two or three weeks.—G. ABBEY.

Leaves and Electric Light.—Green leaves are excited electrically by sunlight. For example, a young Iris leaf illuminated by sunlight shows an electrical current from the lighted to the shaded side, followed by a current in the opposite direction after the illumination ceases. The Tobacco plant behaves like the Iris, but in the leaves of *Tropæolum* and some other plants the electrical effect produced is in the contrary direction.



BROWN ROT FUNGUS ON APPLES.

The Manuring of Fruit Trees.

IV.—Lime.

LIME has been called the basis of all fertility in the soil, and rightly so. Such frequent reference has been made to lime in the preceding articles that a good deal must necessarily be repeated in this final article. In fact, it is impossible to discuss the manuring of fruit trees from any standpoint without referring to it. Lime, unlike nitrogen, potash, and phosphate, is doubly valuable—it is a plant food in itself, and by its action in the soil it sets free and renders available other kinds of plant food. (Shakespeare said of Falstaff that he was not only witty in himself, but caused wit in other men. So with lime in its own domain.) The action of basic phosphate may be quoted as an instance of this double action, it being the lime of course, and not the phosphate, which acts in the way described. In addition to being a plant food, and making other plant food available, it serves to store up food material in the soil and prevent it being washed away. No soil can be richly manured with economy unless there is a sufficiency of lime present to get a maximum of efficiency out of the manure. There should be at least a half per cent. of lime present in any soil, or one part in 200 parts. How are we to know our soil contains this? Anyone, without any knowledge of chemistry, can put it to a very simple but effective test for himself. Take trowelfuls of soil from a dozen different parts of the garden or orchard and mix them well together, so as to be sure you have a fair sample of the soil. Then put some in a tumbler, put a little water on it, and well stir or shake it. Then pour some muriatic, or hydrochloric, acid on it. If the liquid effervesces freely you may take it there is a sufficiency of lime present; but if it does not effervesce, or only very feebly, let lime be the very next manure you apply to the ground.

It is well to remember that 100 lbs. of chalk are equal to 56 lbs. of quicklime, or 74 lbs. of slaked lime, chalk being quicklime and carbonic acid, and slaked lime being quicklime and water. When lime is applied to the soil it absorbs carbonic acid from the air, so that the 56 lbs. of quicklime become 100 lbs. of chalk again. It is best to apply lime (slaked lime is the best, unless it is particularly desired to kill insect pests in the soil) in the winter, as it is apt to injure the tender roots of growing plants. Care should be taken that the lime is spread as a fine powder, as it then becomes more evenly diffused through the soil than when coarse lumps are scattered about, and consequently exercises its beneficial influence upon a greater number of soil particles. The same care as to spreading applies specially to chalk. Gas lime and gypsum are useful forms of lime when the latter is not so easily got. The former needs care in applying it. It is a powerful insecticide in the soil, but if applied too freely it will prevent anything growing in the soil for a year or more, and be very injurious to the roots of trees already growing on it. Gas lime and gypsum, however, do not answer all the purposes that lime does. Gypsum does not assist nitrification, nor does it neutralise the acids in the soil, as it is a salt already. The same is in some degree the case with gas lime. If the latter is exposed to the air for six months or a year, it loses its dangerous properties and becomes principally gypsum. The rates of application of these various forms of lime to the soil should be as follows:—From half a ton to a ton of slaked lime per acre (10 to 20 lbs to 40 square yards), two to three tons of chalk, one ton of gas lime, and half a ton of gypsum per acre.

It is erroneous to suppose that a soil overlying chalk, or chalky clay, has necessarily a sufficiency of lime. The acid of the rain water dissolves some of the chalk, and the acid products of decaying humus do the same, so that every winter's drainage carries away a good deal; hence there is a constant lessening of the chalk in the surface soil. Great benefit is sometimes obtained in such cases by digging two or three spits deep, and putting the second or third spit on the surface. Of course the depth of the surface soil and the nature of the subsoil must determine the expediency, or otherwise, of such a method of procedure.

We will conclude this series of articles by glancing briefly at the good effects of the presence of lime in the soil, though most of them have been referred to in dealing with nitrogenous, phosphatic, and potash manuring.

1, Lime keeps the soil sweet by neutralising the acids arising from the decay of the animal and vegetable matter in the soil.

2, Chalk, to which state all lime applied to the soil ultimately reverts, in its dry state is very friable, and thus it serves to di-integrate clay in pretty much the same way as burnt earth; thus it is of assistance in lightening heavy soil.

3, By keeping the soil sweet it enables the germs in the soil, both those which convert humus into ammonia and those which convert ammonia into nitric acid, to carry on their work, which they cannot do in a sour soil. The carbonic acid being the product of their own existence, it is as injurious to their well-being as the impurities of a vitiated atmosphere are to the well-being of the high types of animals.

4, When nitric acid is formed by the nitrifying germs in the soil

it unites with the lime to form nitrate of lime, when otherwise it would be given off into the air.

5, In the same way lime serves to preserve in the soil the soluble phosphates by converting them into two and three-lime phosphates, and the potash by converting it into carbonate of potash, both of which valuable plant foods would otherwise suffer loss by drainage.

6, Lastly, a judicious application of lime kills off a good many injurious insect pests which are hibernating in the soil.

In this series of articles I have merely touched the fringe of a very big subject, my endeavours being to show the most important things to be done in order to get the maximum return from a given outlay for manure. Constantly applying farmyard manure is expensive, and does not give such good results as are to be obtained by alternating animal and artificial manures. So much attention was directed to lime because of the impossibility of getting ground in a high state of fertility without it. A little book, which all who wish to do any sort of gardening on scientific principles will find extremely useful, is "The Chemistry of the Garden," by Mr. Cousins of the Wye Agricultural College. He modestly says it is intended "for amateurs and young gardeners," but I am mistaken if very advanced gardeners may not learn something from it. For those who want a more advanced book on manuring I would recommend Aitman's "Manures and Principles of Manuring."—A. PETTS.

Forced Strawberry Crop.

DURING the prolonged season over which the forced Strawberry crop extends, there occur many points in their cultivation which would necessarily be interesting to their growers, and if conveyed in short notes to the office of the *Journal of Horticulture* they would both be instructive and interesting as an exchange of thought and experience for other readers. The structures in which Strawberries are grown, the kind of soil employed, varieties, manures, size of pots, and the number and weight of berries, are all items that make their growth varied and instructive when dealt with in detail. Probably at the present time there are fewer varieties employed for forcing than has been known for many years, Royal Sovereign displacing so many kinds formerly considered indispensable. Princess Alice, Black Prince, Keen's Seedling, La Gros Sucrée, Vicomtesse H. de Thury, Sir J. Paxton, Noble, President, Sir Chas. Napier, James Veitch, Auguste Nicaise, and Stevens' Wonder are a selection which form an ancestry to Royal Sovereign, and in so many cases have given way from one to the other in a long line of pre-eminence to, as previously remarked, the almost or entire exclusion for the Sovereign favourite; this, too, with a large concourse of Strawberry growers. One grower of my acquaintance has gone so far as to reduce his selection both for outdoor and pot-grown stock to one variety alone—Royal Sovereign—but whether this is a wise proceeding he is the better able to judge.

That the variety just named can with advantage replace several old favourites goes without saying, but soil and circumstances play so important a part in everyday Strawberry life that no universal law or rule can be laid down as binding everyone. Royal Sovereign can be grown up to 2 ozs. by some with the same effort that another can secure a fourth, or even a lesser weight. In the fruit itself, too, there is a marked variation both in the shape and colour of the berry. At Ammerdown Park, Lord Hilton's seat near Radstock, I recently saw some uncommonly nice fruit growing in 48's, each plant's complement being four berries. These were of the typical conical shape, and of a beautiful deep colour. The water in this garden is so highly charged with lime that it is unsuited for syringing purposes, and in the soil probably iron abounds. At Draycot, Prince Hatzfeldt's seat, near Chippenham, fruit more remarkable still was reviewed recently, the berries being extra large and of rich complexion. In both these instances the pots stood on shelves in houses of modern construction, which were perfectly ventilated, conditions that are of great help and importance. The soil at Draycot is taken from the deer park, off a gravel under stratum, and is excellent for Strawberries and Grapes. Another case came under my notice recently. A market grower realised fruit averaging a pound to each pot, many weighing 2 ozs. each. The soil here is heavier, but very porous, and thus amenable to high feeding. Royal Sovereign was the chosen one in each instance.

Auguste Nicaise is a noble and unique Strawberry for main crop or late batches, none competing with it for size and weight under pot culture. An enthusiastic grower in this locality once related to me that he had attained to a maximum 2½ ozs., and he hoped to increase it to the even weight, 3 ozs., but I have not yet heard if the ideal has been secured. A 3-oz. Strawberry is truly a noble berry, and pride would be a pardonable offence in the man who can command such returns. Stevens' Wonder had a short life, its appearance did not

support or recommend it. Noble is seldom heard of. Vicomtesse and President some cling to for particular seasons and reasons. Leader, though a good outdoor variety, is not equal to Sovereign. Keen's Seedling and La Grosse Sucrée are no longer required. James Veitch is a very good late variety, but is averse to the conditions of some gardens, forced or otherwise.

It must be admitted that manures play an important part in forcing, and there are not many growers who are without their favourite specific. There are such a host of kinds now on the market, and dispensed in such convenient form and quantity, that changes of diet become so easy. Natural liquid manures are excellent when they can be obtained from the home farm tanks; but excellent though these are, many fail to get 3-cz. fruit by their aid alone. Chemical manures of some kind are a great help in the acquisition of sensational fruit; but the basis most chiefly concerned is the loam and its natural constituents. Without suitable soil no sensational outcome could be expected, and it is less likely to come unless the daily needs of the plants are intelligently studied throughout the growing and fruiting season. "The Young Gardeners' Domain" might usefully furnish instances of success in its columns from its adherents, as these are often the actual workers and producers of forced Strawberries.—W. S.

Societies.

Royal Horticultural—Drill Hall, June 4th.

ONE of the most interesting and varied meetings of 1901 was that held in the Drill Hall on Tuesday last. Orchids were a special feature, these being supported by Messrs. Cannell's splendid Cannas, shown finer than ever before, and obtained a gold medal, as did Veitch's central group of 120 spikes of Eremuri; while Irises, Pyrethrums, Roses, Pæonies, and Rhododendrons, and hardy plants in general, were numerous and select. High quality was apparent all round. Messrs. Sutton obtained a silver Knightian medal for an exhibit of Tomatoes, Melons, and Peas in pots. At three o'clock 135 new Fellows were elected. This, we should think, is a record. Mr. W. Bateson, M.A., F.R.S., then gave a lecture on "Resemblances and Inheritance." Many of our readers will be pleased to learn that the old red "theatrical curtain" (as some call it) was abolished on Tuesday, and in its place a dividing screen of flowers and plants; this refers to the top end of the hall. We think that more writers should be appointed to assist the two young men who had practically all the floral lists of awards to furnish at Tuesday's meeting. They were kept hard at work till 4.30 in the afternoon.

Fruit Committee.

Present: A. H. Pearson, Esq. (in the chair); with Messrs. J. Cheal, J. W. Bates, S. Mortimer, Alex. Dean, J. H. Veitch, J. Willard, G. Norman, Geo. Thos. Miles, and W. Wilks.

A boxful of Jefferson and Early Transparent Gage Plums in perfect condition was sent by Leopold de Rothschild, Esq. (gardener, Mr. Jas. Hudson); Peach Duchess of Cornwall was exhibited by Messrs. Thos. Rivers & Son; and Lord Darnley (gardener, Mr. R. C. Cuckney), Cobham Hall, had a boxful of Royal Sovereign Strawberries.

From Lord Suffield (gardener, Mr. W. Allan), Gunton Park Gardens, Norwich, came a fine batch of the Strawberry Lady Suffield, grown and fruited in 6-inch pots. The foliage is strong and vigorous, and each plant bore ten fruits over the average in size, very odorous, and very dark blackish crimson in colour. The variety has certainly many good qualities. Mr. S. Mortimer, Rowledge, Farnham, Surrey, staged new varieties of Melons. J. L. Buchnall, Esq., received a silver Banksian medal for a very large display of splendid Royal Sovereign Strawberry fruits. A new giant Rhubarb came from Mrs. Haywood of Woodhatch Lodge, Reigate. This was very coarse.

Floral Committee.

Present: W. Marshall, Esq. (in the chair); with Messrs. Chas. T. Druery, H. B. May, R. Dean, G. Renthe, E. T. Cook, Frank Cant, Jas. Hudson, Robt. Fyfe, Chas. Dixon, C. J. Salter, Geo. Gordon, Chas. E. Shea, W. P. Thomson, E. H. Jenkins, R. C. Notcutt, O. Thomas, J. Jennings, J. Fraser, E. Mawley, and F. Page-Roberts.

The beautiful rosy mauve coloured *Schizanthus wistonensis*, of bushy, conical habit, and profusely flowered, came from Messrs. H. Low and Co., Bush Hill Park, Enfield. Messrs. J. Laing & Sons, The Nurseries, Forest Hill, London, S.E., brought forward a collection of their multiflora strain of *Streptocarpus*, besides some very fine *Gloxinias* in mixed variety. In point of effectiveness, the group could have been improved by being more raised towards the back.

Mr. Maurice Pritchard, Christchurch, Hants, had a group of cut hardy flowers, in which we noted *Maianthemum convallarioides* (syn. *Smilacina bifolia*), which is a charming rockery subject. *Ochis maculata superba*, *Incarvillea Delavayi*, with rosy-mauve tubular flowers, and many Irises of all sections were observed. The Bush Hill Park firm staged a group of Malmaison Carnations separately from their *Schizanthus* exhibit. Churchwarden and Sir Evelyn Wood were very good.

A large group of *Hydrangea hortensis*, with massive pink flower heads above large, dark green foliage, was exhibited by Messrs. J. Peed and Sons, Roupell Park Nurseries, Norwood Road, S.E. *H. paniculata grandiflora* was included at the back of the old *Hortensis* variety.

Messrs. Barr & Sons, King Street, Covent Garden, W.C., brought up from Long Ditton a beautiful display of German and Spanish Irises, also Oriental Poppies, in many new and striking varieties. The Irises included varieties of *squalens*, *variegata*, *pallida*, *neglecta*, *amona*, and such others. The following were especially distinctive—I. v. aurea, well known and popular; I. p. Garibaldi, violet purple; I. v. Marengo, orange standards, deep rich brown falls; I. aphylla Madame Chereau, white petals with bright violet-blue edge; I. v. Darius, standards yellow, falls purplish, edged with a dim luteous shade; I. germanica Purple King is one of the most handsome; I. v. Sans Souci, yellow with beautifully chocolate veined falls, is also worthy of attention. The Bearded Irises are indeed a grand genus of hardy garden plants.

Cannas from Messrs. Cannell & Sons, Swanley, made a gorgeous show toward the centre of the western wall. As one who sees every exhibit of Cannas that appears in the Drill Hall from Messrs. Cannell, I must say that giant strides are being made with these plants. The trusses are of much greater size than formerly, and the colours of the blooms are likewise deeper, richer, and more brilliant. Four awards of merit were obtained on Tuesday last, and descriptions of the varieties appear under the heading of "Certificates and Awards of Merit." The group was the finest the firm has ever put up, and deservedly obtained a gold medal. They also showed a group of hybrid Cockspear *Aquilegias*.

Mr. H. B. May staged single-flowered Zonal Pelargoniums: and from Messrs. Newport & Co., Hillingdon Heath, Uxbridge, came a group of the dark blue *Lobelia*, having a bright white "eye" or centre, and named Newport's Model. This is a compact growing and very serviceable variety.

Messrs. J. Veitch & Sons, Ltd., Chelsea, had sacrificed something like 120 tall spikes of Eremuri, but the imposing array of these in the centre of the hall will not easily be forgotten. Many of the spikes were 7 feet high, and bore flowers down half their length. Pæonies were staged beneath them, and the effect was splendid, the red of the latter serving to throw up the light shades of the Eremuri; E. robustus, E. r. Elwesianus, and E. himalaicus were the varieties staged. The same firm also exhibited their marvellously fine strain of multiflora hybrid *Streptocarpus*. Amongst new colours being evolved are some with sweet rosy-pink flowers, and others show signs of being very good crimsons. A pure white variety has also been fixed. The number of distinct colours reaches over a dozen shades. *Aquilegias* and *Kalanchoe flammea* were also shown in groups.

Messrs. Sutton & Sons, Reading, had a very varied representation, including double white and pink *Petunias*, a dark blue variety of *Saintpaulia ionantha*, also a white, together with Sutton's Cloth of Gold *Calceolaria*, and other unnamed varieties of a good strain. The Spotted Hybrid *Gloxinias* were large and fine, bearing in some instances twenty-seven to thirty full-sized flowers. The effect of these can be well imagined. The selfs were also splendid. Double tuberous *Begonias* added richness and variety. At one end of the group a collection of fruit was arranged with great taste, the luscious and odorous Melons being set out in baskets raised and attached to a central iron rod. Tomatoes depended around the edge of these baskets. Green Gem Pea and Sutton's Nonpareil Marrow Pea, with others in pots, formed an additional feature of interest in this very fine display. A silver Knightian medal was awarded for the vegetable display, and a silver-gilt Banksian for the floral exhibit.

A choice group of Pæonies from Messrs. Kelway of Langport deservedly received a considerable amount of attention. Lady Curzon, blush with creamy centre; Duchess of Sutherland, pink (single); and Earl of Powis, with deep purplish crimson wavy petals, and deep golden disc of anthers, were very attractive. The Pyrethrums, especially the single varieties, gave a grand selection of most refined and beautiful sorts.

Messrs. J. Cheal & Sons, Crawley, staged *Diervilla amabilis alba*; also a new Oak, with narrow, deeply crenated foliage of a bright golden colour, named Souvenir de Franz Vander Bom. The golden *Acacia* is another shrub too little known, as is *Fraxinus aucubæfolia*, with beautifully orange spotted, pinnate leaves. Messrs. R. Wallace & Co. of Colchester had Bearded Irises, Lilliums, and other hardy flowers in great diversity. Messrs. W. Cutbush & Son, Highgate, London, N., staged *Eremurus himalaicus* above a grouping of *Astilbes* and *Acalypha Macafeana*. The *Begonia La Fayette* (crimson), unexcelled for bedding purposes, was also included. Messrs. Thomas Cripps & Son, Tunbridge Wells, received an award of merit for *Acer colchicum aureum*, than which there are no finer varieties.

Hardy plants, choice, and in great variety, were exhibited by Messrs. Thos. S. Ware, Ltd., of Feltham. *Arum Eggeri*, with blackish purple spathes, created interest; and *Delphinium chinense*, deep blue; *Lilium rubellum*, pink and delicately beautiful; *Lathyrus cærulescens* (L. megapotamicus); *Geum coccineum* fl.-pl., scarlet crimson and double; with the handsome and somewhat uncommon *Ostrowskia magnifica*, were amongst others of the gems shown. Pyrethrums, Papavers, and the whole variety of hardy border plants were in this select and interesting exhibit.

*Mr. A. W. Wade, Riverside Nurseries, Colchester, staged Sweet Peas and hardy plants. A fine group was also shown by Mr. Amos Perry, Winchmore Hill, London, N., including the rose manve *Æthionema grandiflora*, *Onosma taurica*, the beautiful blue *Ixiolirion tataricum*, Stuart's *Aquilegia*, *Pentstemon Menziesi*, lavender; *Lychnis viscaria alba grandiflora*, *Heuchera sanguinea*, *Eremuri*, &c.

Messrs. Wm. Paul & Son, Waltham Cross, Herts, put together an interesting group of hardy *Rhododendrons*, including such good varieties as The Queen, bluish with yellow blotch on throat; Mrs. R. S. Holford, bright cerise; *purpureum grandiflorum*, purplish violet, one of the very best; Frederick Waterer, crimson lake, and *fastuosum* fl.-pl., deep beautiful lavender. These are all exceptionally good *Rhododendrons* to be accepted by anyone as amongst the finest that are now being offered.

Mr. Geo. Prince, Rose grower, Oxford, had an exhibit of Roses, showing fine masses of the Austrian Copper and single Yellow Brier. Cut blooms of *Maréchal Niel* over a velvet covered stage were exceedingly strong and effective. *Medea* and *Cleopatra* were also good in form and colour.

Garden Roses were exhibited by Messrs. Frank Cant & Co., Braiswick Nurseries, Colchester. The red Austrian Copper, Carmine Pillar, the double yellow *Harrisoni*, *rugosa* Madame G. Bruant, white; *Marquis of Salisbury*, bright crimson; *Climbing Devoniensis* and *Crimson Rambler*, were amongst a few of the varieties on view.

Messrs. Carter & Co., High Holborn, W.C., exhibited a varied and extensive group of *Gloxinias* in great variety, double *Petunias*, and Sweet Peas, of which the following varieties are most striking—*Princess of Wales*, *Orange Prince*, *Salopian*, *Stanley*, *Senator*, *Prima Donna*, and *Emily Eckford*.

Messrs. Geo. Boyes & Co., Aylestone Nurseries, Leicester, staged a small, but very interesting, collection of border *Carnations*, all of which impressed us with their brilliance of colour and firm build. The yellow tree variety, *Earl Roberts*, is especially free flowering, and has the qualities of a good bloom.

Mr. A. Waterer staged *Rhododendron* trusses, with a selection of *Azaleas*, all exceedingly handsome.

Messrs. Paul & Son, The Old Nurseries, Cheshunt, had H.T. Rose *Lady Battersea*, which is distinct and very superior. They also staged Brier and other garden varieties of *Rosa*. *Lilac* Madame Lemoine, one of the best of the double whites, also came from their nurseries. *Leopold de Rothschild*, Esq., sent a Rose with a very long name—to wit, *Rosa rugosa germanica Conrad Ferdinand Meyer*. The variety is remarkable for the size of the flowers (like those of a climbing *Capt. Christy*) and the stoutness of the wood growth. It is a splendid subject. Mr. Godfrey, of Exmouth, exhibited a number of novel varieties of *Papaver orientale*.

Orchid Committee.

Present: Harry J. Veitch, Esq. (in the chair); with Messrs. James O'Brien, de B. Crawshay, H. M. Pollett, Jas. Douglas, H. Ballantine, E. Hill, W. Cobb, W. H. Young, H. J. Chapman, F. A. Rehder, J. Wilson-Potter, H. Little, and H. A. Tracy.

The display of Orchids in the Drill Hall was most excellent, both in respect of quantity and quality. Messrs. Stanley, Ashton & Co., Southgate, sent a collection of grandly grown *Cattleya Mossiæ*. There was considerable variation in size and form. Fine varieties were *Mossiæ* Mrs. F. W. Ashton and M. Alice Nugent. *Lælia purpurata* in good condition was also represented (silver Flora medal). *Jeremiah Colman*, Esq. (Mr. W. P. Bound, gardener), Gatton Park, Reigate, arranged a group of Orchids in which the best features were the *Cymbidiums*, *Odontoglossums*, and *Miltonias*. There were also *Lælia purpurata*, *Thunias*, and *Masdevallias*. The plants were very effectively arranged (silver Flora medal).

Messrs. J. Veitch & Sons, Ltd., Royal Exotic Nursery, Chelsea, contributed a striking group of Orchids, of which the central portion was made up by well flowered plants of *Cattleya Mossiæ*. Three splendid specimens of *Oncidium divaricatum* at the back added grace and effectiveness to the group. There were also *Cymbidium Lowianum*, *Masdevallia Veitchiana*, *Cochlioda Noezliana*, *Angræcum modestum*, *Spathoglottis aureo-Veillardii*, *Lælia Latona*, *Oncidium pulchellum*, *Cymbidium eburneum*, *Phalænopsis* Mrs. J. H. Veitch, P. Luddemanniana, P. Manni, *Lælio-Cattleya Canhamiana* alba, L.-C. *Hippolyta*, L.-C. *Canhamiana*, L.-C. *Aphrodite*, *Cattleya albamata*, *Anguloa Clowesi*, *Epicattleya radiata Bowringiana*, with numbers of *Odontoglossums* and *Cypripediums* (silver Flora medal).

Cattleya Mossiæ in variety formed the backbone of the group of Orchids from Messrs. H. Low & Co., Bush Hill Park. Some of the forms were especially meritorious. *Lælia purpurata* was fine, as were the few other Orchids in the group (silver Flora medal). H. T. Pitt, Esq. (gardener, Mr. F. W. Thurgood), Rosslyn, Stamford Hill, was represented by a particularly good collection of Orchids, in which there were several plants of more than average merit. The feature of the group, however, was the two-flowered plant of *Odontoglossum crispum* Pittianum, a superb dark form. Other genera included were *Lælia*, *Cattleya*, *Odontoglossum*, *Miltonia*, and *Anguloa*. The plants were all well grown, and carried flowers of good form and nicely coloured. The arrangement was effective (silver-gilt Flora medal).

H. F. Simonds, Esq. (gardener, Mr. Geo. Day), Woodthorpe, Beckenham, had a striking group, in which *Lælia purpurata*, *Cattleya*

Schilleriana, *Odontoglossum nebulosum*, *Oncidium concolor*, *Brassia cordata*, with *Miltonias* and *Odontoglossum crispum* in variety (silver Flora medal). R. Hay Murray, Esq. (Mr. T. Blackmore, gardener), Springfield, Great Marlow, staged a superb specimen of *Dendrobium thyrsiflorum*; the plant carried thirty-eight spikes, and the flowers were of good size and splendid colour. H. Little, Esq., Twickenham (gardener, Mr. A. Howard), showed *Lælia purpurata rosea* and L. p. *Baronshalt*. Messrs. B. S. Williams & Son, Victoria and Paradise Nurseries, Upper Holloway, arranged a group of miscellaneous Orchids, amongst the best of which were *Lælia purpurata*; *Oncidium Marshallianum*, *Cattleya Mossiæ*, *Odontoglossum crispum*, and *Thunias* were conspicuous.

A. H. Smee, Esq. (gardener, Mr. W. E. Humphreys), The Grange, Hackbridge, Surrey, does not send groups of Orchids to the Drill Hall very frequently, but when this is the case the plants are sure to be good. On the present occasion *Cattleya Mossiæ* in variety made the principal feature. There were also *C. Skinneri alba*, *Lælia cinnabarina superba*, L. *purpurata*, and *Cypripedium Enryale reversa* (silver Flora medal).

Sir Frederic Wigan, Bart. (grower, Mr. W. H. Young), Clare Lawn, East Sheen, had a most artistically arranged collection of splendidly grown Orchids. The colours were very brilliant, and the plants clean and healthy. We observed *Thunia Marshalliana*, *Aërides Fieldingi*, *Cattleya Warscewiczii*, C. *Mossiæ* Lady Wigan, C. *Warneri*, C. *Mendeli*, *Sobralia macrantha alba*, *Lælio-Cattleya Wiganæ aurea*, L.-C. *Canhamiana*, *Scuticaria Hadweni*, *Cypripedium candatum*, *Masdevallia Harryana*, *Lælia majalis*, *Phalænopsis speciosa*, *Lælia tenebrosa*, *Cattleya Mossiæ Reineckiana*, very fine form; *Nanodes Medusæ*, *Cœlogyne Schilleriana*, and many others (silver-gilt Flora medal).

Certificates and Awards of Merit.

Canna Oscar Dannecker (H. Cannell & Sons).—A superb variety with yellow flowers suffused with orange (award of merit).

Canna Grasseherzog Ernst Ludwig von Hessen (H. Cannell & Son).—A magnificent orange crimson variety that deserves a more christian-like name (award of merit).

Canna Jean Tissot (H. Cannell & Sons).—A grand self; the colour is glowing scarlet crimson (award of merit).

Canna Elizabeth Hoss (H. Cannell & Sons).—The fine flowers of this variety are pure yellow dotted and splashed with scarlet (award of merit).

Ivy-leaf Pelargonium Mrs. W. H. Martin (H. B. May).—A lovely variety with large trusses of delicate rose purple flowers; some of the petals are splashed with crimson (award of merit).

Ivy-leaf Pelargonium Leopard (H. B. May).—A very large flower; the colour is rose with profuse crimson markings (award of merit).

Odontoglossum crispum punctatum, *Rosslyn* var. (H. T. Pitt, Esq.).—A chastely beautiful variety. The ground colour is rose purple profusely spotted with crimson (award of merit).

Odontoglossum loochristiense Lord Milner (R. Roberts).—A splendid form; the colour is soft yellow with large brown spots (award of merit).

Cattleya Mossiæ Mrs. F. W. Ashton (Stanley, Ashton & Co.).—A good white form; the colour in the sepals and petals is almost pure; the lip is splashed with purple (award of merit).

Melon Excelsior (S. Mortimer).—A small, beautifully netted fruit the flesh is thick, white, juicy, and of good flavour (award of merit).

Fruit and Floral Awards: Official List.

FRUIT COMMITTEE.—Silver Knightian to Messrs. Sutton & Sons for collection of vegetables. Silver Banksian to Lord Snfield, Gunton Park, Norwich, for Strawberry Lady Snfield; to Leopold de Rothschild, Esq., Gunnersbury House, Aton, for Plums Early Transparent Gage and Jefferson Plum; to Mr. S. Mortimer, for collection of Melons; to J. L. Bucknall, Esq., Langley Court, Beckenham, for Strawberry Royal Sovereign. Award of merit to Mr. S. Mortimer, Farnham, for Melon Excelsior; to Messrs. Thomas Rivers & Son, for Peach Duchess of Cornwall. Vote of thanks to Earl of Darnley, Cobham House, Kent, for Strawberry Royal Sovereign.

FLORAL COMMITTEE.—Award of merit to Mrs. W. H. Martin and Messrs. H. B. May, Edmonton, for Ivy Pelargonium Leopard; to Messrs. Cannell & Sons, Swanley, for Cannas Jean Tissot, Grasseherzog Ernst Ludwig von Hessen, Oscar Dannecker, Elizabeth Hoss; to Messrs. Barr & Sons, Covent Garden, for *Lewisia Tweedi*; to Leopold de Rothschild, Esq., Gunnersbury House, for *Rosa rugosa germanica Conrad Ferdinand Meyer*; to Messrs. T. Cripps & Sons, Tunbridge Wells, for *Acer colchicum aureum*; to Mr. A. Perry, Winchmore Hill, for tree single *Pæony Elsie Perry*; to Mr. M. Pritchard, Christchurch, for *Meconopsis heterophylla*; to Mr. A. Perry, Winchmore Hill, for *Papaver Mrs. Marsh*. Gold medals to Messrs. Veitch & Sons, Chelsea, for *Eremurus*, *Kalauchoe*, &c.; to Messrs. Cannell & Sons, Swanley, for Cannas. Silver-gilt Flora to Messrs. H. B. May, Edmonton, for Pelargoniums. Silver-gilt Banksian to Messrs. Wallace & Co., Colchester, for hardy flowers; to Mr. A. Perry, Winchmore Hill, for hardy flowers; to Messrs. Sutton & Sons, Reading, for group of flowers; to Mr. Geo. Prince, Longworth, for Roses. Silver Flora to Messrs. T. S. Ware,

Feltham, for hardy flowers; to Messrs. F. Cant & Co., Colchester, for garden Roses; to Mr. M. Pritchard, Christchurch, for hardy flowers. Silver Banksian to Messrs. Cntbush & Sons, Highgate, for Spiræas and Eremurus; to Messrs. W. Paul & Son, Waltham Cross, for cut Rhododendrons; to Messrs. Kelway & Sons, Langport, for Pæonies; to Messrs. Barr & Sons, Covent Garden, for hardy flowers. Bronze Flora to Messrs. Carter & Co., High Holborn, for Sweet Peas, Petunias, &c.

Lily Show and Conference.

CROYDON

The Royal Horticultural Society will hold an exhibition of Lilies at their Chiswick garden on Tuesday and Wednesday, July 16th and 17th, 1901. The gates open at 2 P.M. on Tuesday, closing at 8 P.M., and at 11 A.M. on Wednesday, closing at 6 P.M. A large silver medal, kindly presented to the Society by the Williams' Memorial Trustees, will be awarded to the amateur exhibiting the best collection of Lilies. Other medals and awards will be made by the Council as they shall think fit. Note.—The Fruit, Floral, and Orchid Committees of the Society will sit at Chiswick on Tuesday, 16th, at 11 A.M., instead of at 12. All plants, &c., sent for certificate must consequently be ready by 10.30 at latest. On Tuesday, July 16th, a conference on Lilies will also take place in the garden. The chair will be taken at 2 P.M., or as soon after as possible, by Mr. H. J. Elwes, F.R.S., V.M.H., who will deliver an opening address on Lilies discovered or brought into cultivation since the issue of his monograph on the subject. The following have also been asked, and for the most part have already kindly consented, to contribute papers or notes to the Conference:—Mr. J. G. Baker, F.R.S., V.M.H., Kew; Dr. Bonavia, Worthing, Sussex; Mr. Luther Burbank, California; Mr. F. W. Burbidge, M.A., V.M.H., Dublin; Mr. W. Goldring, Kew; Dr. Henry, China; Mr. H. Jonas, Whyteleaf, Surrey; Heer Ernst Krelage, Haarlem, Holland; Mr. J. Carrington Ley, East Farleigh, Kent; Mr. George Massee, Kew; Mr. G. L. Patey, Newton Abbot, Devon; Mr. Carl Purdy, California; Captain Savile Reid, Yalding, Kent; Mr. R. Wallace, Colchester; Mr. G. F. Wilson, F.R.S., V.M.H., Weybridge Heath, Surrey; Mr. George Yeld, M.A., York. Anyone interested in Lilies and willing to contribute a short paper or note is requested to communicate with the Secretary, R.H.S. Office, 117, Victoria Street, Westminster, S.W. It is hoped that everyone having Lilies in bloom at the time will be kind enough to send them for exhibition at Chiswick.—By order of Council, W. WILKS, Secretary.

Croydon and District Mutual Improvement.

The usual meeting was held in the Society's room at the Sunflower Temperance Hotel on Tuesday evening last. Mr. W. J. Simpson occupied the chair. There was a very good attendance of members. The secretary, Mr. J. Gregory, gave an interesting discourse on "Aquatic Plants," dealing principally with the newer varieties of Nymphæas, and their cultivation in tanks, tubs, &c. The lecturer, at the commencement, treated upon the preparation and formation of the lakes, tanks, tubs, &c; the planting and after management of the plants, a list of the best and most useful sorts for various purposes, was given. Attention was called to the enemies of aquatic plants, such as the rat and vole, coarse rank weeds, and Confervæ. The lecture was illustrated with a series of photographs. A brief discussion followed the lecture, and on the proposition of the chairman an unanimous vote of thanks was accorded Mr. Gregory. Messrs. J. Peed & Son exhibited a collection of named Pyrethrum, also a beautiful collection of alpine plants on rockery. The next meeting will be held on June 18th. Subject: "Vegetables for Exhibition, &c."

Scottish Horticultural Association.

The monthly meeting of this Association was held at 5, St. Andrews Square on Tuesday evening, the 4th inst., Mr. Comfort, president, in the chair. The paper for the evening was by Mr. Cunnison, of Morningside Park Nurseries, on "Pear Culture in Scotland." Mr. Cunnison's paper was of an interesting nature, with many happy and *à propos* hints as to the Pears that succeed best in Scotland, with instructions as to culture and prevention of disease. A spirited discussion followed, and Mr. Cunnison was awarded a very hearty vote of thanks. The table was gay with exhibits, including a handsome vase of cut Orchids from Mr. G. Wood, Oswald House, with a number of beautiful things, including Momodes, a splendid collection of cut Rhododendrons from Mr. Fordyce, Bonally, a vase of very fine Spiræa astilboides, and May-flowering Tulips, amongst which were Bouton d'Or, Golden Crown, and Picotee from Mr. M. Todd, Stoneybank, Musselburgh, who also exhibited a very fine plant, in most luxurious bloom, of White Viola Marchioness, probably the best white in cultivation, one of Mr. Grieve's many contributions to Violas. Messrs. Methven & Sons exhibited a very handsome sample of their celebrated Vanack Cabbage, also of their June Broccoli. Mr. J. Grieve, Red Braes Nurseries, contributed. It was intimated to the meeting that the annual excursion of the members would take place on Saturday, the 22nd June, to the gardens at Fordel, Fifeshire. It was also agreed to hold the now established summer meeting for the exhibition of Strawberries, Roses, Sweet Peas, and other midsummer flowers on Friday, the 12th July, when growers are invited to contribute.



Fruit Forcing.

Vines.—Early House.—As soon as the Grapes are cleared give the inside borders a thorough supply of liquid manure, or a top-dressing of fertilisers washed in moderately. This will assist the Vines in recuperating from the taxed energies consequent on early forcing, and help plump the buds by contributing to the health of the foliage. Keep the ventilators open constantly, even in cold weather. Syringe thoroughly to cleanse the foliage, and repeat occasionally to keep the old leaves healthy. Fresh laterals will soon be produced, and cultivators should maintain an even growth all over the Vines, pinching the gross laterals and encouraging the weak. The mulching or covering having been removed from the outside border, with just enough of the lighter part left to protect the roots, a good watering with liquid manure may be given, but this will only be needed where no rain has fallen. Avoid heavy mulching, as it deprives the borders of the essential atmospheric influences.

Second Early House.—Vines started at the new year have the Grapes ripening, but there is fully a fortnight to three weeks difference in the time of ripening between Vines carrying light crops and those with heavy burdens. Maintain a circulation of warm rather dry air constantly, increasing the ventilation early. Keep the floors well damped on hot days with a view to check excessive evaporation, allowing the temperature to fall to 60° at night when cold, or 65° when warm, with sufficient warmth in the hot-water pipes to prevent atmospheric moisture condensing on the Grapes. If there is likely to be any want of finish allow the Vines time by giving as long a rest at night as possible. If there is any doubt about the roots lacking moisture examine the border, and if found necessary give a thorough soaking of water or clear liquid manure in the morning of a fine day, and when soaked in mulch with a little light material. Moderate moisture is essential to the health of the foliage, hence damping the floors must be resorted to occasionally, as there is no fear of damaging ripening or even ripe Grapes at this season if only it is accompanied with air; besides, the moisture will assist in finishing and keeping the Grapes, and to prevent colour being taken out of Hamburgs a double thickness of herring net should be drawn over the roof-lights. Allow a moderate extension of the laterals to encourage root action.

Early Muscat House.—The fruit ripening will need a dry condition of the atmosphere as compared with Black Hamburgs, but avoid great aridity, or the foliage will fall a prey to red spider. Muscats must have a time longer than most other Grapes to acquire that rich amber colour and the rich flavour so much prized. Do not allow any deficiency of moisture in the border, for Muscats are gross feeders, but give tepid liquid manure, or water through a surface mulching. The supply of water to the roots will to some extent compensate for the drier condition of the atmosphere. Provide a circulation of air constantly, preventing the moisture condensing on the berries by sufficient warmth in the pipes to insure a changing atmosphere. This is imperative to prevent "spot." Lateral extension is the best safeguard against shanking at this stage, along with a steady temperature. Avoid sudden fluctuations and depressions. Keep the night temperature at 65° to 70°, 80° to 85° by day, with a little sun, and 90° to 95° with it in full force. Ventilate early, and regulate by the sun's increase, and so with its decline reduce early, securing as long a day of ripening from sun heat as possible. The old leaves of Muscats are liable to be scorched under powerful sun after a period of dull cold weather. In very bright weather draw a single thickness of tanned netting over the roof-lights, which, without impeding too much light, will prevent the Grapes from scalding and the scorching of the foliage.

Newly Planted Vines.—Every encouragement should be given these to make a sturdy growth. The borders will need copious supplies of water, yet there must be no excess. A light mulching around the stems will encourage roots from the collar. Syringe on fine afternoons, and close early. Let the canes extend to a length of 9 to 10 feet before stopping, then continue a growth from the extremity, and let it grow with whatever laterals it may until September, then shorten them by degrees so as to have them entirely removed by the time the principal leaves are maturing. Pinch these late-growth laterals back to the extremity of the cane. This growth will cause the stem to thicken and form free channels, through which the sap can be rapidly transmitted. Cut the cane down to the lowest wire at the winter pruning, and then the Vines will push sturdy growth the following year. Supernumeraries should have the laterals pinched to one leaf as produced, and the primary growth at 6 to 9 feet. The laterals must not be cut off close to the cane until growth has ceased, and the principal leaves should be left on the cane as long as possible.

The Kitchen Garden.

Planting Winter Greens.—A first batch of plants may be placed out on good, well manured ground. It is customary to plant out in showery weather, but if opportunity occurs, and moisture is absent, they may still be planted. Take out a trench alongside the garden line of sufficient depth, and well soak with water or liquid manure. Lift with balls of soil attached to the roots if possible, and lay in the trench at the required distance apart. Cover the roots with soil, making firm, and thoroughly moisten the roots of each, and, finally, fill up the trench with dry soil. Brussels Sprouts, Autumn Cauliflower, Broccoli, and Cabbage will, thus treated, soon take root, and quickly become established. Should the weather remain dry, a few further waterings may be necessary, but as a rule little is required when well planted at first.

Peas.—Autocrat is one of the best late Peas, and a fair quantity should be sown. Sow them in manured trenches below the general level of the surrounding ground, so that water or liquid manure may be readily and economically applied when necessary to promote and sustain growth. Any rows of Peas showing signs of suffering should be liberally watered; afterwards those in pod will be much benefited by a sprinkling of nitrate of soda along each side of rows. Crush the nitrate fine, spread it evenly about a foot in width, and water it in. Sulphate of ammonia is also good, but acts less quickly; guano in solution, or liquid animal manure, may be used if readily obtainable. A good mulching of cow dung is of great service in conserving the moisture, and, further, helps to hold and distribute the moisture applied.

Vegetable Marrows.—These planted out, whether on heaps of old leaves, vegetable matter, or on good ground in the open garden, require some encouragement to make free growth. They must have water in dry weather, so as to maintain the soil moist for the roots to ramify in. They will then grow quickly and vigorously, and soon commence forming fruit. Distribute the growths equally over the space immediately around each plant, and leave them to their own way afterwards. No stopping of growths is required.

Celery.—Plants for the earliest crop should be placed out forthwith in moist trenches of manure and soil. Good, sturdy plants with abundance of roots are indispensable. Such will not suffer much from removal, and quickly start away into fresh growth. Water immediately after planting if the weather is hot and dry, or plant immediately before rain.

Onions.—After the rows have been thinned and weeds removed from among the plants, also the soil stirred with the hoe, light dustings with soot are beneficial. Soot tends to prevent the Onion fly depositing its eggs at the base of tender young Onions, also acting as a stimulant to growth, especially should a shower of rain fall. The autumn sown crop transplanted this spring are not so subject to attacks from the Onion fly, but soot sprinkled between the rows, or light dressings of artificials, will be beneficial.

Asparagus.—Weeds should be pulled out from among the plants. Endeavour to allow an even distribution of fairly strong growth over the whole of the beds now. A dressing of artificial manure should be given and watered in.

Thinning Root Crops.—Carrots, Parsnips, and Beet should be finally thinned now to the proper distance apart, a distance of 12 inches being suitable. Keep the soil clear of weeds, and hoe to promote growth.

Spinach.—Where Spinach is in demand sow successional rows thinly of the round variety. New Zealand Spinach will grow well now sown outdoors in drills. Rich ground is desirable.

Radishes.—Sow Radishes now in a semi-shady position, first well watering the soil. Sow broadcast, and thinly covering with dry, fine soil.

Lettuce.—Summer Lettuces must have plenty of water and space to grow. Tie up Cos Lettuce that is hearting. Sow more seed thinly in shallow drills, first well watering if the weather is dry, and cover with fine, dry soil.



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Experimental Fruit Farm at Woburn (H. L.).—A report of the experiments may be had by application to Mr. L. Castle, Duke of Bedford's Experimental Fruit Farm, at Ridgmont, Beds. Messrs. Eyre and Spottiswoode also publish a report of this Fruit Farm, price 5s.

Worms in Vine Border (A. S.).—The earthworms were attracted to the border by the manure. They will be beneficial rather than otherwise by making perforations in the soil.

Chorizemas (R. F.).—The sprig you send is of *Chorizema cordatum splendens*, of which we are able to furnish an illustration, for the helpful guidance of other plantmen. The *Chorizemas* are most graceful and resplendently showy spring-flowering plants, always certain to produce a crop, and last a great length of time in good condition. They are easily raised from cuttings put in now, and require strict attention to pinching.

Tomato Plants Diseased (C. H. W.).—The portion of stem and the fruit is infested by the "sleepy" disease fungus, *Fusarium lycopersicum*, which was first recorded from Guernsey. The disease is indicated by the dull colour of the leaves, which commence to turn inwards and to droop, and this, in most instances, is quickly followed by a partial or complete collapse of the stem, hence the name "sleepy disease." Shortly after the sleeping stage has been reached, the portion of stem just above the ground is more or less covered with a very delicate white mould, consisting of fruiting branches or conidiophores, bearing conidia or spores at the tips of the branches. This is the *Diplocladium* stage of the fungus, and the conidia fall to the ground, where they germinate, producing a mycelium, which attacks the rootlets of Tomato plants and continue the disease. The second or *Fusarium* condition soon follows, forming from the same mycelium that previously produced the *Diplocladium*. The spindle-shaped, curved spores of the *Fusarium* stage are produced in immense numbers, and germinate quickly, and thus the disease spreads rapidly. In the matter of prevention, treatment with



CHORIZEMA CORDATUM SPLENDENS.

fungicides are of no avail. Diseased plants should be removed. The soil should be mixed with quicklime, applying 1 lb. per square yard and leaving on the surface for a few days after slaking before digging in, then taking small spits so as to mix well with the soil. It is also excellent practice to mix lime with soil intended for growing Tomatoes, and some time in advance of using. Where the house has contained diseased plants the soil should either be removed or treated with lime, or basic slag phosphate may be applied at the rate of 2 lbs. per square yard, and after digging in apply, as a top-dressing, $\frac{1}{2}$ lb. kainit per square yard, leaving until the following spring, stirring well before planting, the treatment being given in autumn. The walls, &c., should be drenched with a solution of iron sulphate, 25 lbs. to 50 gallons of water, and 1 pint of sulphuric acid, this being poured upon the iron sulphate in a wooden barrel, then add the water by degrees. Seed should not be obtained from diseased plants, or even from a neighbourhood where the disease has prevailed. The stripes on the fruit are probably caused by black rot, due to attack by "black stripe" fungus, *Macrosporium Tomatum*, for which thorough spraying with potassium

sulphide solution, 1 oz. sulphide to 2½ gallons of water, first dissolving the sulphide in a quart of hot water and then adding the cold water; this should be done at frequent intervals. Avoid the use of green manure, as this favours the disease, causing the fruit to crack, and thus increasing the susceptibility to disease.

Exhibiting Orchids (Subs).—Orchids in bloom are generally included in groups of foliage and flowering plants arranged for effect in competition at flower shows. They are quite eligible.

Black Currants Failing (R. L.).—From your description and the appearance of the buds it would seem as though there was a deficiency in the sap supply. Have a trench between the rows of bushes and fill it daily with water.

Brompton Stocks (P. O. W.).—Sow the seeds in July in an open situation, and water if dry weather ensues. When large enough to handle plant them out where they are intended to bloom, selecting a sheltered situation. Afford protection during severe winter weather by means of Firze or Fir, or other close-branched evergreens. The Stocks may be planted close together so as to require thinning in March, but the safest plan is to pot them singly in small pots, and place in a frame on a dry bottom on the approach of frost, plunging the pots in coal ashes, giving air in mild weather, and planting out with the balls entire in March.

Tomatoes Unsatisfactory (S. L. B.).—The plants just coming into flower with the topmost leaves curling over are probably affected by spot fungus, *Cladosporium fulvum*, which produces such indication, though it may be that they are infested by "sleepy disease," for which see reply to "C. H. W." In any case it is advisable to give the plants plenty of air, especially in the early part of the day, and to allow a good heat through the early afternoon, as the fungus cannot well endure a high temperature and dry atmosphere; but there must not be a stagnant atmosphere for any length of time, therefore admit a little air later on to allow the pent-up moisture to escape, even a little at night at this season being useful in preventing the deposition of moisture on the leaves, flowers, and young fruit, which is favourable to the germination of fungoid spores, and conducive to the development as well as attacks of this and other vegetable parasites. It would be well to dust a little anti-blight on the plants, using the Malbeco bellows, both of which may be had from Messrs. Barr & Sons, King Street, Covent Garden, London, applying very lightly. The chief thing, however, is to give plenty of air, as before advised, and not overwater or overfeed the plants, thus securing a healthy disease-resistant growth.

Names of Plants (Ralph Godbeer).—The name of your double Tulip appears to be *Couronne des Roses*, but the flowers were rather faded when we received them. (R. A. C.).—1, *Taxus baccata aurea*, of which there is also an erect growing variety; 2, *Taxus baccata* var; 3, *Prunus pissardi*; 4, *Fraxinus ornus*, the Manna Ash. (A. P.).—1, *Armeria vulgaris* Crimson Gem; 2, *Achillea rupestris*; 3, *Cotoneaster microphylla*; 4, *Tamarix tetrandra*; 5, too poor a scrap to accurately identify; 6, *Anchusa sempervirens*; 7, *Thymus serpyllum lanuginosum*; 8, *Celsia arcturus*. (F. S.).—1, *Rosa lucida* fl.-pl.; 2, *Cornus sanguinea*; 3, *Prunus padus*; 4, *Geum rupestris*; 5, *Colchicum* species, send when in flower. The flowers appear in autumn, projecting from the soil. The perianth tube is long, and the ovary remains below ground, where it is protected from cold, &c. In the spring the leaves appear, and at the same time the capsule is brought above ground by the lengthening of its stalk. The seeds and corms are used in medicine as a remedy for gout. We have never heard of another case where animals died through eating the corms or leaves. (M. L. G.).—*Henbane*, *Hyoscyamus niger*, a most interesting British plant, but very poisonous. (Fred. Reid).—1, *Rhodotypos kerrioides*; 2, *Acer sanguineum*; 3, *Halesia tetraptera*, the Silver-bell tree; 4, *Viburnum plicatum*. (A. T.).—1, *Acanthopanax spinosum*; 2, *Polygala oppositifolia*; 3, *Tritonia crocata*.

Phenological Observations.

JUNE 7TH TO 13TH.

PLANTS DEDICATED TO EACH DAY.

7 Fri.	Nightingales' songs cease.	Red Centaury.
8 Sat.	Common Honeysuckle flowers.	Moneywort.
9 Sun.	Dagger moth appears.	Berberry.
10 Mon.	Silver Y moth appears.	Bastard Acorus.
11 Tu.	Common Mallow flowers.	"Midsummer" Daisy.
12 Wed.	Redbreasts' second broods hatched.	White Dog Rose.
13 Thr.	Small blue butterfly appears.	Garden Ranunculus.

Next Week's Events.

Monday, June 10th.—United Horticultural Benevolent and Providential Society Committees' Meeting.

Tuesday, June 11th.—Cambridge Horticultural Society's open show; Evesham Horticultural Exhibition (three days).

Wednesday, June 12th.—Royal Cornwall Agricultural Association at Bodmin (two days); Yorkshire Gala and Horticultural Exhibition at York (three days); Colchester Rose and Horticultural Society's Show (three days).

Covent Garden Market.—June 5th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.
Apples, Tasmanian, case	12	0 to 15	0	Melons, each	1 6 to 2 6
Figs, green, doz.	4	0	10 0	Oranges, case	15 0 to 35 0
Grapes, Hamburgh, lb. ...	1	6	2 6	Pears, case	15 0 to 25 0
„ Muscat	3	0	4 0	Pines, St. Michael's, each	2 6 to 4 6
Lemons, Messinas, case	9	0	12 0	Strawberries, lb.	2 0 to 3 0

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz.	2	0 to 3	0	Leeks, bunch	0 1 to 0 2
" Jerusalem, sieve	1	6	0 0	Lettuce, doz.	0 6 to 1 0
Asparagus, English, 100	1	6	2 0	Mushrooms, forced, lb.	0 8 to 0 9
" Giant, bundle	15	0	20 0	Mustard and Cress, pnt.	0 2 to 0 0
Batavia, doz.	2	0	0 0	Onions, Dutch, bag	5 0 to 0 0
Beans, French, lb.	0	9	10	" English, cwt.	5 0 to 0 0
Beet, red, doz.	0	6	0 0	Parsley, doz. bnchs.	2 0 to 3 0
Broccoli, bush	0	0	1 0	Potatoes, cwt.	3 0 to 7 0
Cabbages, tally	1	6	3 0	" New Jersey, cwt.	12 0 to 16 0
Carrots, doz. bnchs.	2	0	3 0	Radishes, doz.	0 6 to 0 9
Cauliflowers, doz.	1	0	2 0	Rhubarb, doz.	1 0 to 1 3
Chicory, Belgian, lb.	0	4	0 0	Savoy, tally	4 0 to 5 0
Corn Salad, strike	1	0	1 3	Shallots, lb.	0 4 to 0 0
Cucumbers, doz.	2	6	4 0	Spinach, bush	4 0 to 5 0
Endive, doz.	1	3	2 0	Tomatoes, English, lb.	0 8 to 0 9
Greens, bush	1	0	1 6	Turnips, doz., new	4 0 to 8 0
Herbs, bunch	0	2	0 0	Watercress, doz.	0 6 to 0 8
Horseradish, bnch.	1	2	1 6		

Average Wholesale Prices.—Plants in Pots

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz.	12	0 to 18	0	Foliage plants, var., each	1 0 to 5 0
Acers, doz.	12	0	24 0	Fuchsias	5 0 to 6 0
Aralias, doz.	5	0	12 0	Geraniums, scarlet, doz.	4 0 to 5 0
Araucaria, doz.	21	0	30 0	" pink, doz.	4 0 to 6 0
Aspidistra, doz.	18	0	36 0	" King of Denmark, doz.	5 0 to 6 0
Boninas, doz.	20	0	24 0	Hydrangeas, white, pink	9 0 to 12 0
Crotons, doz.	18	0	30 0	Lycopodiums, doz.	3 0 to 4 0
Dracæna, var., doz.	12	0	30 0	Marguerite Daisy, doz.	6 0 to 12 0
Dracæna, viridis, doz.	9	0	18 0	Mignonette, doz.	6 0 to 8 0
Erica, various, doz.	8	0	18 0	Myrtles, doz.	6 0 to 9 0
Euonymus, var., doz.	6	0	18 0	Palms, in var., doz.	15 0 to 30 0
Evergreens, var., doz.	4	0	18 0	" specimens	21 0 to 63 0
Ferns, var., doz.	4	0	18 0	Pelargoniums	10 0 to 12 0
Ferns, small, 100	10	0	16 0	" Ivy leaf	6 0 to 8 0
Ficus elastica, doz.	9	0	12 0		

Average Wholesale Prices.—Cut Flowers

	s. d.	s. d.		s. d.	s. d.
Arums, doz.	2	6 to 3	0	Maidenhair Fern, dozen	
Asparagus, Fern, bunch	1	6	2 6	bnchs.	4 0 to 6 0
Carnations, 12 blooms	1	0	1 6	Marguerites, white, doz.	
Cattleyas, doz.	6	0	9 0	bnchs.	3 0 to 4 0
Cornflower, doz. bnchs.	1	0	1 6	" yellow, doz. bnchs.	2 0 to 3 0
Eucharis, doz.	2	0	0 0	Narcissus, dbl. white, doz.	1 6 to 2 6
Freesia, doz. bnchs.	0	0	0 0	Odontoglossums	2 0 to 3 0
Gardenias, doz.	1	6	2 0	Roses, Niphetos, white,	
Geranium, scarlet, doz.				doz.	1 0 to 2 0
bnchs.	4	0	0 0	" yellow, doz. (Perles)	1 6 to 2 0
Gladoli, doz. bnchs.	6	0	9 0	" red, doz.	1 0 to 1 6
Iris, Spanish, doz. bnchs.	6	0	8 0	Smilax, bunch	3 0 to 4 0
Lilium lancifolium album	2	0	3 0	Spirea, doz. bnchs.	4 0 to 6 0
" rubrum	3	0	5 0	Stock, white, doz. bnchs.	2 0 to 2 6
" longiflorum	2	0	3 0	Sweet Peas, white, doz.	
Lilac, white, bunch	3	0	0 0	bnchs.	4 0 to 6 0
Lily of the Valley, 12 bnchs.	8	0	12 0	" coloured, doz. bnchs.	4 0 to 6 0
Mignonette, English, doz.	4	0	6 0		

Narcissus in Bowls.—A few weeks ago I saw a very fine display of the common double Daffodil grown under this method. It ought to be more commonly practised, and perhaps a note on the simple and yet interesting method may be of some interest to other readers. The grower, an ordinary working man, gave me the following on how he successfully grew Daffodils in water in his cottage window. About Christmas, the bulbs (twelve in each bowl, of 7 inches in diameter) were placed on shingle, or sifted gravel, of which the bowls were more than three parts filled; but I am getting too far ahead. First of all, two pieces of wire were so placed in the bowl that the ends were about 6 inches above the top of the bowl, and so when the plants were in flower these wires were used as neat supports. These wires were easily kept in position by the gravel. The gravel was made moist, and the bowls placed away in a rather dark corner of the living room, in which there was always a fire during the day. Very soon they commenced root growth, so that they needed to be kept from pushing each other over. This difficulty was overcome by twisting a piece of fine string around each bulb once, and connecting the bulb next to it with a series of loops; the arrangement answered the purpose admirably. Nothing more was required to be done, save an occasional watering, and placed in the window when top growth commenced. The flowers appeared about the middle of April, and came large and good. The bulbs through being on the surface of the shingle needed a covering of moss, and they then had a very presentable appearance, fit for anything. There were twelve bulbs in each bowl, and there were twelve flowers, which I consider is very good.—W. H. R.



Pigs and Piggeries.

THE keeping and breeding of pigs has been such a profitable undertaking of late, and there are so many fairy tales flying about as to the comfortable sums which have been realised out of the industry, that this may be an opportune moment to offer a few words of advice and caution to intending beginners. In the first place, pigs are now so dear that the stock-in-trade could not be laid in under greater disadvantage; and secondly, pig breeding is a very "switch-backy" affair, rarely keeping at one level for long, and for every upward movement having a quickly following and equivalent downward one. In fact, embarking on pig breeding when the animals are very dear is like buying a mine from which the greater part of the value has been extracted. Of course, pork and pigs may keep their price for some time, but it will be contrary to all precedent if they do.

The proper housing of pigs is important. Many people have an idea that any hovel is good enough for the pig. It is true that he will thrive very often under very disadvantageous conditions, but under them there is much greater risk of loss than there would be under proper management, whilst the latter, without doubt, assists in bringing the animal more quickly to maturity in the case of feeding animals, and in a saving of food in nearly all cases. The sty should have the outer walls of brick or stone, the former for preference, as a brick wall is less easy to pull to pieces, an amusement which the average pig dearly loves. If it is to be divided into two or more compartments there is nothing better for the purpose than old railway sleepers. These are also excellent for the flooring, which is very necessary if the ground or situation be at all damp. In some sties pigs are very liable to attacks of cramp, and we have seen great improvement in that respect resulting from the introduction of a raised platform for the pigs to lie upon. Of course we are supposing that the piggery is well drained, but with the best of drainage on some soils there is this liability to cramp, and a raised platform is the only remedy we know of. The sty is better away from other buildings, and should have an exercise yard attached, and should be near a grass field or paddock, where a run out occasionally is very beneficial to breeding sows as well as to growing stores.

An open shed, or a stable or cowhouse, may be easily made into places suitable for keeping pigs by the erection of proper partitions made with sleepers or similar material, but these said barriers must be made high enough, for it is a very bad thing for a sow in the early period of gestation to get a habit of climbing about, which she may do if she can get her fore feet on the sides of the sty. Harm may accrue, resulting in the loss of both sow and litter. It sheds or other high buildings be used for the housing of pigs (and we confess that we like our animals to have plenty of room overhead), suitable provision must be made for exercise. Breeding sows do well in an ordinary farm fold-yard, but they must be put in the sty a week or so before they are due to farrow, so that they may get accustomed to the place, but of course they may be let out a little each day. As the time of farrowing approaches all long straw should be removed from the sty and a little Wheat pulse substituted; very short straw, or straw cut long, would do, but not chaff, especially Oat chaff, which would get into the eyes of the young pigs and blind them. Some people recommend that a sow should be watched, and the pigs removed as they arrive; this sounds very well if it can be done, but some sows will brook no interference, and are much better left alone. In fact, on farms the rule is to leave the sow severely to herself until the farrowing is over. Two ounces of Epsom salts given in the food before, and two ounces of flowers of sulphur given after farrowing, are excellent for keeping the sow in cool condition, and will not affect the quality of the milk except for the better. In fact, all pigs should have flowers of sulphur in their food once a week, and much less would be heard of swine fever and similar ailments.

As to food, we like good sharps better than any other kind of meal, and it is quite as cheap. On farms where there is often a good deal of small, not very saleable Barley, it is convenient to grind it and use it as pig food, with the addition of boiled or steamed Potatoes; but if the food is not home grown, and we perforce must buy, we certainly prefer sharps, which are good for pigs of all ages and sizes. In summer, if we have a number of growing pigs in a yard, there is nothing cheaper, and few things better, than Maize given whole, and thrown down on the causeway, but never in a trough. It must be well scattered about, so that the

pigs take plenty of time in finding and masticating it. They must have plenty of water with it. For sows with young ones a mixture of food is best. Fine sharps, ground Oats, and a little bran, is a good mixture. If old milk is available it is most valuable for the small pigs, especially after they have been weaned; but it is not such a necessity as some think, for thousands of young pigs are reared without it, but it is a great help in the quick feeding of young porkers. Where there is no milk a good substitute is tallow crap, otherwise the refuse from the tallow chandlers. This can be procured at about 1d. per pound, and may be mixed or partially dissolved with boiling water, and then mixed with the meal or other food before serving. There is a tendency with many people to overfeed pigs, which is a good reason for using sulphur as a safeguard. For a well grown pig 4 to 7 lbs. per day is an ample supply of meal. We have kept one in excellent condition on the smaller quantity, with nothing additional except a few raw Potatoes or Swede Turnips. Mangold is an excellent summer food, especially in conjunction with the whole Maize, but we are only referring to animals of six months and upwards.

The most common ailment amongst pigs is acidity on the stomach. The old fashioned local antidote for this was a quantity of rudd or ruddle broken up among the food. Of course the active agent here was the chalk in the ruddle, and any other form of chalk would be equally effective. With many amateurs the question of bedding or litter is a great difficulty, but pigs, though they love to wallow, are all the better for cleanly surroundings, and a reasonably dry bed must be provided, or pig keeping, and certainly pig breeding, had better be discontinued.

Work on the Home Farm.

We are all crying out for rain, for 0.12 of an inch does not last long when there are sixteen hours of sunshine. There is a thundery look about the sky, which encourages us to hope that a change may not be long. There is an old saying, but perhaps only a local one, a dry May and a dripping June put everything in tune. We have had a dry May, now for a dripping June. The dryness of the surface soil will make inexperienced farmers hesitate to go on sowing Swedes and Turnips, but where the tilth is fine there is no need for delay; the seed will keep as well in the soil as in the bag, even if it does not germinate, and it will be there ready when the needful moisture is supplied. Turnips like a dusty seed bed. Present conditions will make strong-land farmers turn their attention to summer fallow; a good dragging now with the steam cultivator, followed immediately by a set of three-horse harrows, will give the land a thorough stirring, and leave it open to the full influence of the sunshine. That much of the land of this country does not get sufficient and thorough cultivation it is easy to believe. It was so when the times were good and farming profitable, and it is so yet. Good farmers work their land well, and do not omit ploughing. We only the other day heard a very shrewd man remark that spring cultivators would be a curse if they led farmers to neglect ploughing.

Turnip fly is very rampant this year, and has already made havoc with crops sown early on the frost mould, which is the only method adopted by many strong-land occupiers. Of course this is only on land where the Turnip crop is always a difficulty, yet the crop is always such a heavy one when a plant is secured that its failure means a perceptible diminution of the root crop of the country, for is not strong land representative of the great majority of the arable land?

Barley has gone off very much from last week, and, unless copious warm rain comes soon, promises to be little better than last year. Even amongst the early sown plots it is too easy to see the thistles which have not yet been grubbed up. We would rather find a few thistles in the sheaves when we are building stooks than have them making themselves too evident amongst the crop in early June.

Grass is still bare, and seeds are less prone than they were, but all kinds of stock are doing well, as they always do on dry meat if the supply be not too limited. Dairy cattle are the exception to this rule, but so far with a plentiful supply of water they have held their own.

Some Good Lambing Results.—In many parts of England, says the "Farmers' Gazette," there is in existence among flockmasters a practice of giving premiums to shepherds which we have often thought might be more extensively adopted with excellent results on this side of the Channel. This practice consists of giving premiums of a certain sum for every lamb that a shepherd succeeds in rearing beyond a certain number. This custom is very common over the greater part of the South of England, and is specially popular with admirers of the Suffolk sheep. At a recent meeting of the Committee of the Suffolk Sheep Breeders' Association, the results of the past season's competitions for prizes offered by that body for the lowest percentages of losses among ewes were announced. In this competition the first prize was awarded to a shepherd who, with 402 ewes, reared 642 lambs, and thus had an average of 29.85 lambs to every score of ewes. The second prize went to one who reared 613 lambs from 445 ewes, or an average of 25.39 lambs to every twenty ewes.

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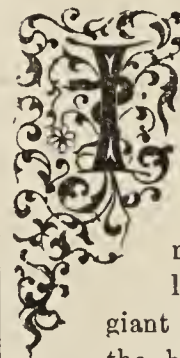
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Journal of Horticulture.

THURSDAY, JUNE 13, 1901.

The Cobbler's Garden.



IMAGINE, if you can, a low, rambling cottage, largely composed of heavy timbers, and with no pretensions to style, standing back from the King's highway, and nestling, as it were, in the bosom of a large, old-fashioned garden, with a giant Blenheim Orange tree almost hiding the habitation from the road. I daresay

there are many such homesteads that would answer the description, but this one in particular belongs to old Sam Scripps, the village cobbler (he is never called shoemaker, though the fact of his being so is duly recorded on a board over his door), who was born under the rambling roof, and has one wish—that he shall also be privileged to die there.

About the appearance of Mr. Scripps there is nothing striking. It is said that he is the spit of his father, who was shoemaker before him, but as there is no one in the district now who remembers that individual, it is a matter of conjecture. At any rate, old Sam is a dapper little man, with wizened-up features, after the manner of cobblers generally, and always wears spectacles, which he has a habit of looking over when talking to anyone. The little lean-to shop at the end of the cottage is a strange mixture of horticulture and the leather trade. There are three or four tenantless benches, for the time was when Sam Scripps employed several hands and was in a good way of business—but that was before the ready-made boot trade came in—and now the old man works alone, patching and mending, being his chief occupation. But the empty benches have their use, for they are drawn up near the windowed front and support a shelf, which in turn supports a number of pots containing some of the cobbler's treasures in the shape of plants. Sam's life appears to be made of two important parts—one is spent in the garden, and the other amongst the shoes in the shop, where, by the way, he is never so engrossed but that he can find time to walk up to the wicket-gate leading

READERS are requested to send Notices of Gardening Appointments or Notes of Horticultural Interest, Intimations of Meetings, Queries, and all Articles for Publication, officially to "**THE EDITOR**," at 12, Mitre Court Chambers, Fleet Street, London, E.C., and to no other person and to no other address.

into the road, talking gardening all the way, with every customer who happens to call with a pair of understandings in need of repair.

Just now the narrow border on either side of the cobbled pathway is bright in its spring garb. The Crocuses are just going over, and have been very pretty, but, as old Sam says, "them dratted sparrers make such a set at 'em, allus pickin' out the yaller ones," and so much thread was taken in protecting the flowers that the shoemaking trade came to a standstill till another supply was obtained. The big clumps of Lenten Lilies are all aglow, and Sam says what they would have been, but he was obliged to let the vicar's wife have all the early flowers for decorating the church at Easter. What with his spring flowers at Easter and his fruit at harvest time, I think the old man firmly believes that it would be impossible to decorate the sacred edifice without his aid. But Sam is in trouble this year about his bulbs. By a sad stroke of mistaken energy he has lost his Hyacinths and Tulips. It happened in this way. A married daughter paid her annual visit last summer with a little tribe of offspring in train, just when the first of the Shallots were being peeled for pickling, and the flower bulbs lay ripening on the pavement in front of the shop. Prompted by example and a childish desire to help, the youngsters continued the peeling after grand-dad had finished, and finding that the "other onions" did not attract tears like the Shallots, they confined their efforts to them, with the result that when old Sam appeared on the scene all the Hyacinth and Tulip bulbs were nicely peeled and ready for the pickle jar. His grief was great, but it is greater now, as he points to the bare patches, and tells once more the story of his loss. Happily there is recompense in the "Polyants" (Polyanthus) now unfurling their trusses, with the Wallflowers and the Auriculas coming along. "Purty things is Racklesses," says old Sam, "but they haves a knack o' going off if you don't watch 'em and divide 'em now and agen."

Among his older loves, the cobbler divides his affections between a Wistaria, that rambles over a wired archway leading to the front door, and an Apricot that covers the front wall of the cottage. The former has a thick gnarled stem, like the limb of a forest tree, and when in bloom the bunches of purple flowers hang like clusters of Grapes, and pervade the air with their sweetness. All are welcome to come and see, but few to touch, and favoured is the friend who carries away a bunch, for the Wistaria is sacred. Sam just remembers it being planted; they have grown old together, and it is the old man's boast that "there ain't another in the parish like it, nor in the county, for the matter o' that." About the Apricot he has some misgivings, for after the manner of its kind it has of late years developed a habit of losing some of its branches, and Sam wonders which will be the first to go—him or the tree. "Apricots from that tree," he says, "has won first prize at the show ever since it started, and I should like to keep the record; but there's somethin' wrong, and, like me, it's gettin' older." On the gable end there is a tree in the vigour of full bearing, which Sam proudly looks on as a masterpiece of fruit culture. "Now there's a tree for you," he says, looking over his spectacles at the neatly trained branches. "A Victoria, and no Plum to beat it, so far as I've seen; raised it from a stone, grafted it from a tree in 'The Hall' garden, and trained and pruned it with my own hand, though I be no reg'lar gardener, in a manner o' speakin'."

Near the road, on a bit of ground rejoicing in the name of orchard, are the Apples—the Blenheim Orange I spoke of, a Wellington, and one or two others bearing local titles. Sam planted them, and has watched their development; year after year he has thinned their superfluous branches, and applied the annual dressings of whitewash to the stems. "The old Blemon," he remarks, has put many a bright pound in my pocket. He doesn't bear every year, but then you can't expect it of no Apple. He don't often miss, though, and the fruit goes on the floor in the spare room till nigh Christmas; and there's one man allus ready to have 'em at any price."

But in Rose time the old shoemaker betrays his pet fancy. In the early morning before half the world is awake you can find him with his cobbler's apron on, for that is part and parcel of Sam's attire, peering, not over this time, but through his spectacles, in search of the mischievous maggot or the troublesome aphides. He has his own

ideas about the latter, which no naturalist would ever shake. "They be all the same thing," he says, "and a dratted nuisance at that, but their colour changes according to the food as they eats. Take a black dolphin off a Broad Bean and give him a feed o' Rose, why he'd change to green of course." Whether the above theory is founded on actual demonstration I have never been able to discover; but the shoemaker knows a thing or two about Roses, though the names he gives them are altogether unintelligible to anyone but himself. At a certain season he may be seen plodding along the bank sides with his eye fixed on the hedgerow, from which one after the other the Brier stocks are drawn, and transferred to the little prepared space near the workshop; and woe to the boots that want patching when budding is in process. The job has to wait, be it ever so important, and a grey head bends low over the stocks, and the buds are inserted with deft fingers. You may watch, but you must not worry, and between the operations of slitting, fixing, and tying, Sam will tell of past triumphs in this direction, and impart to the uninitiated as much of the mysteries of Rose budding as he thinks proper. A big, umbrella-shaped Gloire de Dijon occupied the centre of the bed near the window. "Look at that now," remarks the cobbler, "I budded that the same year as Bob joined the perlice force. I tried to make a cobbler of him, but he wouldn't have it, and there'll be no one to carry on the business when I'm gone." Bob, by the way, is the youngest son of the old shoemaker, and in his following remarks he so mixes up the connection that it is difficult to know whether he is talking about the boy or the Rose. When they are out, the Gloires, Maréchals, Rothschilds, La Frances, and the rest of them, few customers go to the shop without a little bunch, or at least a buttonhole, of the sweet-scented flowers to carry home with them, for with his Roses the old man is no niggard.

And the windows are bright with flowers, even to that of the workshop. "She liked 'em so," says the old man; and by the faltering tone, and the movement of the corner of the apron to remove the glistening teardrop, it is easy to see that he refers to one whose memory remains dear. "She was a dab hand at flowers was the missus. I raised this Lucy Finnis (pointing to a Fuchsia) from her old plant, as always took first at the show. It's dead now, and I shouldn't like to lose this, as it's a sort of link, you know."

So much for the cobbler's flowers and his fruit; but there is the kitchen garden as well, which is attended like the rest. I haven't space to describe it here, for I could not do it justice without the accompaniment of some of its owner's expressions; but proof of the old man's talents is seen on the flower show day, when a dapper little figure in apron and spectacles darts here and there in the work of staging; or later in the day, attired in the frockcoat only worn on special occasions, he approaches the raised platform to receive his prizes at the hands of the squire's lady.—G. H. H.

Missouri Botanical Garden.—After the report of this progressive central United States Botanical Garden, which was given in this Journal, on page 393, it is interesting to hear that further extensions have recently been made to it. The area of the Missouri Botanical Gardens (better known as Shaw's Garden, St. Louis) is to be nearly trebled by the addition of unimproved land lying west and south of the present gardens. An addition of 22 acres, known as the North American tract, is now being laid off and planted. It is the intention of Dr. William Trelease, director of the gardens, and Henry C. Irish, his horticultural assistant, to proceed without haste, but the improvements will certainly be finished and in a high state of perfection by the opening of the World's Fair. The North American tract will be devoted to hardy North American plants, the collection of which will be the most complete in existence. When the gardens are completed they will comprise 127 acres, and with their broad driveways, artificial lakes, and great forest trees will give the people another fine park, in addition to the botanical collection, library, and museum, which Dr. Asa Gray, the famous botanist, pronounced "the finest institutions of their kind in this country." It is now proposed, in time, to erect a series of ornamental buildings in the tract now used as a vegetable garden, which will be a permanent home for the botanical library, museum, and herbarium, which are already crowded for room.

**Odontoglossum x Wilckeanum Golden Queen.**

A grand plant of this beautiful hybrid *Odontoglossum* was shown at the Temple Show by W. Thompson, Esq. (grower, Mr. W. Stevens), of Stone, Staffordshire. The Orchid Committee awarded it a first-class certificate, it having previously had an award of merit when exhibited as *O. crispum* Golden Queen. The plant from which our illustration of an individual flower was taken bore a splendid raceme of twenty large flowers. These must have been each upwards of 5 in. across; creamy white in ground colour, with large irregular spots of brown on the sepals, and smaller roundish ones on the petals. Besides the floral award a cultural commendation was also recommended.

Thunia Bensoniæ.

The blossoms of this species are very charming just now, and though not perhaps quite as showy as *T. Marshalliana*, it is nevertheless quite as valuable. The sepals, petals, and part of the lip are a pretty amethyst purple, shading almost to white, the lip having raised lines of golden yellow. *T. Bensoniæ* was discovered by Col. Benson near Rangoon in 1866, so naturally a very hot moist house is necessary to grow it well. When the growths are complete a thorough ripening in the full sun, and a long rest subsequently, make up its annual routine.

Oncidium Brunleesianum.

It is a great pity this species is so rare, as its distinctiveness would insure it a place with all lovers of this genus. The flowers are said to occur on large branching panicles, and this is how it is usually figured, but only the more fortunate of us see it in this form. The small bits that one usually sees only whet the appetite for something better. The sepals and petals of the flowers, which are individually small, are pale yellow, and bent forward in a hood shape over the similarly coloured lip, the latter having an intense magenta or nearly black front lobe.

It is over twenty years ago since this *Oncidium* was introduced from Rio by the gentleman whose name it bears, and who, it appears, supplied the late Professor Reichenbach with flowers for its description. On one or two occasions since then a few plants have appeared, but either our collectors have been unlucky, or it is extremely rare in a wild state, for there are very few known specimens even now. It is to be hoped that some day it will be forthcoming in quantity, and it will prove a grand addition to this already fine genus, a genus, I consider personally, one of the most useful in the whole Orchid family.

Dendrobium Schneiderianum.

I have always had a great liking for this pretty hybrid, and although it does not vary so much as some others in this section, some of the later forms are a distinct advance on the earlier ones. I have just received a rather belated specimen, but a good one none the less, from a Somerset correspondent, for a name. In habit *D. Schneiderianum* most resembles *D. Findleyanum*, though one detects a likeness to *D. aureum* as well, while the flowers have pretty rosy white sepals and petals tipped with purple. The lip is orange yellow, with radiating lines of deep purple and a hairy disc. Though not quite so vigorous as the noble hybrids, it is nevertheless a good and healthy grower.

Dendrobium transparens.

This is a slender growing pretty species that does not receive the attention it deserves. The blossoms appear in small bunches of two or three upon the upper portion of the stems. They are white, with tips of purple to the outer segments and purple blotches on the lip. Its culture does not differ materially from that of the deciduous species generally, but it must not be so severely dried as the stronger growing sorts in winter, or the stems will shrivel. *D. transparens* is one of the many species for which we are indebted to the Veitchian collector, Mr. T. Lobb.

Celia macrostachya.

This will not, perhaps, commend itself to the lovers of large and showy Orchids, but it is an extremely pretty and quaint species. The rosy red flowers have each a small straw coloured sheath at the base, which gives the spike a light and distinct appearance. *C. macrostachya* is an easily grown plant, not unlike *Zygopetalum Mackayi* in habit, but some growers have found it shy flowering. I have had no trouble with it, my plan being to give it a distinct resting season in a cool Peach house or greenhouse after the growth is complete.

Orchids from Shipley.

A nice box of Orchids containing many unusually fine forms comes from Mr. J. C. Tallach of Shipley Hall Gardens, Derby. Some of the prettiest forms of the useful and beautiful *Oncidium Marshallianum* are included, one especially having the whole of the upper part of the flower a very deep orange, quite unlike the usual yellow of the species. Large spikes of such a form must make a glorious show, for even the commoner forms are among the most showy of Orchids.

Another fine Orchid included was a grand form of *Cypripedium Rothschildianum*, with exceptionally large and deeply coloured dorsal sepal, and very wide across the petals. This is one of the most striking in the genus, and it comes almost as a shock to find that more than twelve years have elapsed since its introduction. Good forms of *C. Curtisi* and several other *Oncidiums* are sent. The collection of M. Mundy, Esq., which I had the pleasure of visiting recently, is replete with such fine forms, and under Mr. Tallach's care these and all other branches

are making great strides. I am not sure whether I have before mentioned the fact in this column, but Shipley is one of the few places in England where the culture of Orchids in Belgian leaf mould is successfully carried out.

Night Temperatures for Orchids.

One of the greatest aids to keeping Orchids of any kind in health is a cool and restful temperature at night. Not only is it very refreshing to the plants, but it is distasteful to the insect pests that prey upon them, these thriving and multiplying very rapidly in a dry warm atmosphere, such as is caused by closing a house early in the afternoon and turning on fire heat to maintain the temperature at some given point, usually much too high. It is the worst of mistakes to keep any house devoted to Orchids at a stated heat and not to allow this to vary whether the outside temperature is high or low.

It does not do, of course, to run to the other extreme and let the house fluctuate too much, but when there is a difference in the outside temperature of, say, 10° or 15° from one night to another, as there often is at this time of year, then the inside heat should be allowed to follow it by dropping some 4° or 5°. Whenever, owing to severe cold, the fire heat has to be pushed, it is best to damp the house very freely, and endeavour to avoid that harsh, dry feeling that is so enervating to Orchids generally. I like to see a little dew on the foliage on entering the house on a summer morning, this being a sign that all is well.—H. R. R.



ODONTOGLOSSUM x WILCKEANUM GOLDEN QUEEN.



Select Species of Roses.

THE following tall-growing species stand out conspicuously among others. *R. Beggeriana*, a dense bush with upright shoots 10 feet high, bearing pink flowers in May and June, makes a good subject for the back of a shrubbery or for grouping in a plantation. *Cinnamomea*, a similar habited plant with pink flowers, is suitable for the same purpose. In warm localities, or where a position on a south wall can be given, the "Cherokee Rose" (*R. lævigata*), a rambling grower with semi-evergreen leaves and large white flowers, is sure to make friends, but it must not be planted in the open. *Moschata*, a native of S. Europe and India, one of the most ornamental and most fragrant of all, should be found in every large garden. It grows 15 or 20 feet high, with very strong shoots, producing large clusters of white musk-scented flowers in July. It is an exceptionally good plant for the back of a wide shrubbery or for grouping with clusters of trees, its long arching shoots finding for themselves places amongst the branches of other things, so framing the flowers with foliage and showing them to full advantage. Fine specimens of this are to be seen near the succulent house and in the arboretum at Kew. *R. repens* (syn. *R. arvensis*) is an excellent plant for growing against a fence or old tree, its long rambling branches quickly covering the support, and as the white flowers are freely produced it makes a lovely object after it has attained its full dimensions.

The next group contains a great many species; roughly speaking they make bushes 6 to 8 feet high, though some grow taller. *R. multiflora*, for instance, makes much longer shoots, but, being pendulous, the above height is a good average for the plant. *R. alpina*, a pink flowered plant, the flowers being at their best in June, grows about 6 feet high, flowers freely, and bears large quantities of red fruits; *foliosa*, a pink flowered species from N. America, of upright habit, with reddish stems; *microphylla*, a curious plant of bushy habit, with large flowers of a pretty blush colour, followed by large, spiny fruits, greenish yellow, and highly fragrant when ripe, a native of China; *multiflora*, from China and Japan, an exceptionally useful plant, quickly making large bushes, sometimes as much as 40 feet in circumference, flowers very freely, bearing its flowers in large terminal panicles; it is also a useful plant for the hybridist, many good varieties having been raised through its agency; *pomifera*, a distinct species, with red flowers and large, red, hairy, Gooseberry-shaped fruit; *rubiginosa*, the Sweet Brier, everyone's favourite; *rubrifolia*, an upright growing plant with purple leaves; *rugosa*, a well-known Japanese plant, with large red flowers, followed by large Apple-shaped red fruits, an excellent subject for groups in the wild garden, shrubbery, or park, as a contrast its white variety is also very useful; *sericea*, distinct by reason of having but four petals to each flower, has white or cream coloured flowers, which are produced during late April and May; *setigera*, the "Prairie Rose" of N. America, makes shoots 15 to 20 feet long, but too slender to support their own weight, it is an excellent subject for climbing over fences, old trees, or large shrubs; it flowers freely, the colour being red. It is one of the latest to blossom, being at its best in July and August.

In the dwarfier species some of the most charming are found. *R. lutea* is found from 2 to 5 feet high; it is an Oriental plant, with deep yellow flowers produced in May and June; it and its double variety are excellent for beds or groups; *indica*, though slightly tender, is a beautiful subject for beds on lawns, &c., its pretty red flowers being borne throughout summer; *Mayli*, a very free-flowering European plant with red flowers, grows 3 to 4 feet high, and is very useful; *spinosissima*, in its numerous white, pink, red or yellowish forms, is always acceptable, making fine groups, while its robust-growing variety *altaica*, with large white flowers, is worthy all praise. The comparatively new *Wichuriana*, a Japanese semi-evergreen, white-flowered plant, is an excellent subject for covering banks, its glossy leaves and white flowers forming a dense carpet a few inches high throughout late summer and autumn, while earlier in the year its foliage is bright and pleasing. Others which may be grown are *Webbiana*, *xanthina*, *ochroleuca*, &c., while for sunny walls and pillars, *Banksiæ*, *bracteata*, and *Fortuneana* should always have places.—W. DALLIMORE.

Roses on Pathways.

AN American paper furnishes a beautiful illustration of the wild Prairie Rose of Michigan (*Rosa setigera*), with *Rosa Wichuriana* as a ground cover, as these are employed along the roadways of a few of the public parks in American cities. The system seems to be to allow

the long, loose, scrambling shoots to cluster in masses as a hedge bordering the roadways, and furnishing an irregular edge with showers of bright flowers that cluster even to the ground, and the effect is grand.

Rose Carmine Pillar.

No single Rose now abloom excels in richness and showy display this vigorous growing variety of Paul's. At Kew, in the Rosedene, there is one very massive clump composed of only a few plants, but which have grown with remarkable vigour, and covered a considerable area. The whole length of the shoots bear lateral trusses of the large, glowing carmine flowers, having a white inner centre. For pillars it is also an admirable Rose.

Jottings on Pines.

Potting Suckers.—The early-fruited plants as they finish will afford suckers, which should be taken in sufficient quantity to meet the demand, and be started at once. These will afford plants for fruiting about this time next year, and form a supplementary batch to those started in the spring. They require a close, rather moist pit, and a bottom heat of 85° to 90°. Pay careful attention to shading, and damp, but not too heavily, as required.

Spring-potted Suckers.—If the strongest of those potted last March are not in their fruiting pots they must not longer be kept in the small ones, as that stunts their growth and weakens them, so that they do not do well afterwards. When given their fruiting pots the plants should have a regular bottom heat of 85° to 95°, and be thoroughly well watered after potting, not giving more until the soil becomes dry, always avoiding a too wet soil, as that is not favourable to the formation of roots.

Young Stock.—The succession plants are now making rapid progress, and must not be crowded, or that will result in attenuated growth and poor shows of fruit. Afford them ample space, so as to secure a sturdy growth. Have the foliage dry before it is affected by the sun, ventilating early in the day at 75° to 80°. Watering should be attended to once a week, not giving any until it is found by examination to be needed, and then afford a thorough supply of tepid liquid manure, being careful not to apply it too strong. Syringe the plants on fine afternoons, and otherwise maintain a genial condition of the atmosphere by damping the house; but avoid a very moist atmosphere in dull weather, as it only tends to a soft growth, and that is seldom satisfactory when the weather becomes bright, often rendering shade imperative to prevent scorching. While water remains in the axils of the leaves syringing is not required, and in watering pour the water well up the plants, as they have roots in the axils of the leaves at the base, which assist their growth and render them sturdy.

Plants for Winter Fruiting.—If the strongest of the plants placed in their fruiting pots last September are not showing fruit, means must be taken to effect it. Bring them together, and subject them to a resting process for a period of four to six weeks, lowering the heat at the roots to 75°, ventilating at that temperature and closing at the same, maintaining a free circulation of air about the plants in favourable weather, only employing artificial heat to prevent the temperature falling below 60° at night. Water should not be withheld, but do not give any until a plant becomes dry, and then afford a liberal supply. When the small suckers of last autumn, that were wintered in 7 or 8-inch pots, and shifted this spring into the fruiting pots, have filled the pots with roots, they may be subjected to the same treatment as advised for the larger plants, and these will afford a successional supply of fruit.

Fruiting Plants.—Those with the crowns in close proximity to the glass will require a slight shade from powerful sun, otherwise they may become disfigured, and the fruit also is prejudiced by exposure to fierce sun. Cease syringing when the fruits commence to colour, supplying water to the roots as necessary, but avoid excessive supplies, as a wet state of the soil is apt to cause the fruit to become black in the centre. Ventilation improves the quality of the fruit, therefore admit air whenever circumstances permit, not allowing the temperature to fall below 80° in the daytime, and maintain it at 70° to 75° at night. Queen and Providence Pines started into fruit early in February will ripen this month, they coming in three weeks to a month in advance of Smooth-leaved Cayenne, Charlotte Rothschild, and similar varieties started at the same time and under similar conditions. They afford a good successional supply, which may be still further extended by removing some of the plants with the fruit to a cooler house.

These fruits are much superior in freshness and using qualities to imported, the noble specimens that are the outcome of superior cultivation completely eclipsing those produced abroad. Indeed, I am of the few in believing that even this fruit is nowhere grown so well as in Britain, and could here be grown to pay by the most approved and economical methods of cultivation. The Providence Pine has a fine effect in table decorations, and though not equal to a Queen in quality, should be grown in limited number for its superior size and showy appearance. Enville also may be mentioned as one of the most shapely and easiest grown of Pine Apples, coming in the height of the London season.—PRACTICE.

Scarcity of Journeymen Gardeners.

THAT a scarcity of young gardeners exists appears to have been proved in many directions, and some causes have lately been advanced accounting for it, though, to my mind, all have not been touched upon or is known. Khaki fever, low wages, few emoluments, uncertainty of prospect in the distant future, and long hours, are some put forward, but there must be others. If a little study is made of the census returns, as affecting the rural population, it will be clearly seen that in country districts, where gardening becomes so often localised, there is a decline, and in some instances a serious one, of the population. The country is slowly, but surely, becoming depopulated, while the towns increase their census returns almost by leaps and bounds. Town gardening is not that which is likely to raise a supply of journeymen gardeners for exportation to the country, and for some reason young men trained in the suburbs are failures when a change of situation removes them from town environment. There was a time when in this neighbourhood no difficulty was experienced in getting lads as learners or improvers in garden work from adjacent villages, and a like experience was contiguous to the farm. Now, however, the numerical strength of aspirants for gardening is, as in other work, anything but vigorous. There is none the less desire than formerly to take up the initial stages of the work, but the supply is inadequate. This, if true in one locality, must be equally applicable to another, and so long as this state of things continues, so long will gardening suffer in the supply of suitable young men. Who can tell what difficulties the next decade may unfold as affecting the labour market?

It is known only too well that gardening is an underpaid calling when comparisons are made with trades—some of them. Even admitting this, there are plenty who, despite the low pay, would elect to remain gardeners rather than choose the dull, endless monotony, to say nothing of the unhealthy nature of some mechanical pursuits. An argument advanced against gardening, beside the low pay, is that it takes so long to become really proficient, and while this is quite true there is something in it decidedly favourable, because in horticultural pursuits there is such an endless limit shrouded in magnetic foils, that enlist undying affections among those who can appreciate Nature's charm of life in its many and varied forms. There are so many aspects that may collectively form the gardener's daily vocation furnished in the growth of, for instance, Orchids; stove and greenhouse plants, both of soft and hardwooded kinds, flowering and foliage; fruit, both forced and hardy; vegetables of so many kinds; flower garden, shrubs and trees, lawns and borders; flowers herbaceous, biennial, annual, alpine, bog and water; Ferns tropical and hardy. The enumeration of these few subjects opens up a vast field, and an illimitable scope for the man who chooses gardening as his vocation, to pass this life in agreeable and pleasant surroundings. The work is hard, and there are troubles that come with almost every day, but as there is such diversity there is no permanent blank, for while one object may fail another will flourish—there is no conflicting influence that can treat all alike, for evil.

Though there are, perhaps, a scarcity of young gardeners, horticulture is not yet a decaying institution, and it is not well to take a too serious view of the present state of the labour market. One aspect of the case seems to have escaped the notice of your several correspondents, and that is gardening is a vocation almost entirely evolved out of pleasure, and unconnected with profit, that is in private gardens, and to form unions with the object of materially raising the standard of wages would result only in the reduction of labour, so as to bring about a balance of expenses; and, it might be asked, which of the two would be the greater evil or the most desirable end. There is already an upward tendency in the matter of wages, and if this can only be continued without friction between employer and employé, good will result; but it is a hopeless case to fight on the lines of trade unionism. We are living in an age of ambition, and from some of this endowment comes a cause of the scarcity complained of. Many young men fired with this quality solicit the higher term and rank of foreman, when their age and qualification fit them only for positions as journeymen, hence a superabundance of one exist at the expense of another. There are many who, at the age of twenty-one or twenty-two, claim to have mastered the duties pertaining to the office of journeyman, and step up with self-confidence into the higher scale; and with what result often? Certainly they cannot invoke that confidence that becomes the due of the higher subordinate from the gardener and employer. There are, admittedly, exceptions to every rule, but it is not an invariable one to find the riper and respected judgment in an age that allows of so short a time for graduated training.

The cessation of work at one o'clock on Saturdays is a great relief to the boredom of the week, and I take it to be a healthy sign this desire among employers to grant this half-holiday when circumstances permit, and it is proved both by nurserymen and gardeners that this one o'clock rule answers admirably, and far beyond the expectations of the early pioneers. Its adoption places young men on an equal footing with other trades, and recreations afforded in the cricket and football fields are not denied one class more than another. If gardeners and employers will only recognise the importance of this movement for short hours on Saturdays, and make it a national custom,

it will remove a baneful influence existing against the adoption of gardening as a profession. In theory it would appear impossible; in practice it becomes easy.—W. S.

The Fuchsia.

THE Fuchsia, named after a German botanist, Leonard Fuchs, has been cultivated in this country for a long period, and its popularity is still in the ascendant. The species of Fuchsia are almost entirely natives of Central and Southern America, originally introduced from Chili, Mexico, and Peru. The first plant is stated to have been brought to this country by a sailor about the end of the eighteenth century. The raising of new varieties from seed commenced about the year 1840, and has been continued down to the present time with marvellous success, which is apparent to everyone who compares the old with many of the more recently introduced varieties. Cuttings should be inserted round the side of 60's or 48-pots; better still in shallow boxes if they are required in large quantities, using light sandy soil, and placing the pots or boxes where they will get a genial bottom heat. Give them a gentle watering through a fine-rosed can to keep the foliage fresh and settle the sand round the cuttings. In a few weeks they will emit roots, when they should be potted off singly in small 60's. They should be kept close for a few days, until the roots begin to push into the new soil. A good compost for Fuchsias is a mixture of fibry loam, leaf mould, and either cow manure or horse droppings in a decomposed and pulverised state, about three parts of the former to one part each of the latter, with a good dash of sand to keep the whole porous. Mix all well together previous to potting. When the young plant begins to grow, the shape and size of the plant should be determined; if for a standard the leading shoot should receive every encouragement, and be kept tied to an upright stake, rubbing out all side eyes until the desired height is reached, when the formation of the head should be encouraged by removing the points of the leaders, and afterwards pinching to every pair of leaves made until the desired size of head is obtained. If a pyramid be the shape aimed at, it will be necessary to pinch the leaders at an early stage of growth. If this method of pinching be neglected in the earlier stages of cultivation it will be almost impossible to obtain well grown pyramidal specimens.

Cuttings struck in September (which is a good time to commence growing specimen Fuchsias) should make thrifty little plants by the end of October. They should then occupy a position near the glass, and where the temperature does not fall below 50°, bearing in mind that it is not desirable to encourage much growth at that period. They should succeed in the position just indicated until about the beginning of January, when they may be given a little higher temperature, such as that of a vinery which is being forced would afford—and to the majority of gardeners a convenient place—or, better still, a position in a bed of fermenting material, the atmosphere of which appears exactly to suit them. They will now begin to grow freely in either of the positions just named, and should never be allowed to flag from want of water.

So soon as the roots begin to show themselves at the sides of the 60-size pots shift into 48's or 32's, using the compost already recommended, but in a rougher state than before, and with the addition of a little bonemeal. They should be turned round to the light at least once a week to induce a uniformity of growth, particularly if grown in a lean-to structure. Allow them all the sun obtainable for some time to come. A moist atmosphere should be maintained, therefore syringe overhead in the morning and afternoon whenever the weather is favourable. When giving the final shift, pot rather firmly; the soil is apt to retain moisture for too long a period if potted loosely, and consequently it may become sour before the roots occupy it. Thorough drainage should be secured during all stages of growth, and the plants should be kept in a warm, moist growing atmosphere after their final shift, gradually inuring them to more light and air. As the days lengthen and the weather becomes bright it may be necessary in certain cases to afford them a little shade for a few hours at midday. Fire heat may be entirely dispensed with from May onwards; cold draughts and sudden changes of temperature should be avoided.

TRAINING.—It is not a good practice to stake or train the Fuchsia to any great extent, and, indeed, such practice would be superfluous in the case of many varieties; but, while bearing this in mind, I have found it beneficial to insert a few thin short sticks around the sides of the pots to enable me to tie out the branches of some of the denser growing varieties when intended for specimens, thus forming a base-work on which to rear the future specimen. When the pots in which the plants are to be flowered are well filled with roots liquid manure may be given, rather weak at first, but increased in strength as the

plants get accustomed to it. Green and black fly sometimes make their appearance, and also thrips and red spider, particularly if the atmosphere is dry, and therefore an outlook should be kept for such unwelcome visitors. Never allow them to establish themselves on the plants; should they do so, they will be the means of making them cast their foliage, and that in a very short space of time. An occasional syringing with softsoapy water, or with a solution of one of the many compounds now provided for such purposes, will keep the plants clean and free from the pests just named. It is not desirable to retain many old plants over winter unless very large specimens are required. A few plants started in a brisk heat in January will in a short time yield abundance of cuttings, which can be grown to a good size during the early spring months for greenhouse and conservatory decoration. Market growers seldom use any pots larger than 48's, and the results obtained in this size pot, and by the judicious use of stimulants, are wonderful. When done flowering the plants may be placed out of doors to ripen the wood, and when frost sets in they should be brought indoors and placed on a border from which they can absorb a little moisture, as they never break freely in spring if dried to too great an extent. Old plants should not be repotted until well started into growth. Mrs. Marshall, Mrs. Rundell, Charming, and Miss Lucy Finnis are old and useful favourites for either in or out of doors. Mrs. Cannell and Madame Rosaine are very fine but later to flower.—D. SHEAMAN.

Melons.

WHEN the fruits are about to ripen, it is very tantalising to find some, if not all, of them cracking at the heel, and in consequence there is a great loss of means, time, and labour, with no end of disquieting remarks. I have found that this proclivity is most pronounced in the small, hard-rinded varieties, such as Scarlet Gem, still unsurpassed for high quality, and also in the fruits of plants that have been grown under conditions somewhat stinted for water and nourishment in the stages up to completing the swelling, then the merest change in the atmospheric circumstances from relative droughts to comparative moisture and growing conditions suffices to burst the fruits just on the point of ripening; even when water is withheld from the roots and atmosphere, a close state of the atmosphere causes the fruit to crack. In growing Melons, I find it is important to have a firm soil in order to secure solid, heavy fruit, with thick flesh and the highest quality, then secure free swelling of the fruits by due supplies of water and nutrition at the roots, with a growing condition of the atmosphere right up to the commencing to ripen period. The rind of the fruit is then neither unduly hard nor thick, and by withholding water from it, and only giving sufficient supplies of moisture at the roots to keep the foliage fresh, combined with a little air constantly, gentle warmth in the hot-water pipes, and rather free ventilation, increased from the early part of the day, the danger of the fruit cracking is reduced to a minimum. Still, the fruit will sometimes crack under any circumstances; therefore, when there is likelihood of this occurring, it is advisable to cut the Vine about half-way through a short distance below the fruit, thus limiting the supplies of watery matter from the roots and inducing ripening instead of growth. The chief thing, however, is to keep the atmosphere airy, and thus cause evaporation from the fruit instead of condensation upon it.

Another matter in the cultivation of Melons has also troubled me seriously at times, that of the setting of the blossoms. This would seem sometimes to arise from inherent tendency to sterility on the part of the plants, they showing pistillate organs plentifully, but either they or the staminate organs being impotent. In such dilemma I have had recourse to cross-fertilisation, in some instances with a certain measure of success, but in other cases without any appreciable degree of difference, the blossoms absolutely refusing to set, or, if apparently setting, the fruit only swells a little, then turning yellow and withering. It is very annoying to thus strive without attaining any result but disappointment. In such cases I have almost invariably found that the cultivation is at fault. The plants have too generous feeding in the early stages of growth, the soil being loose instead of firm, and the bed and air moisture too generous, for when there is a happy medium the pistillate blossoms form boldly, and the staminate ones are laden with effective pollen. Conditions at the time of flowering may, and often do, make a difference between setting and non-setting, for when the atmosphere is kept close and moist, to an extent causing moisture to be deposited on the blossoms, no art of man can cause the embryonic fruits to set, whilst when the plants are in flower, a little air constantly, with a free circulation on fine days, fertilising the flowers as they become fully expanded, and when a sufficient number of fruits about equal size are set upon a plant, remove all others and flowers, both staminate and pistillate. Three or four fruits on plants of ordinary size and vigour are as many as each can bring to full size and highest perfection, overcropping being alike fatal to appearance and utility, the fruits very often not reaching maturity, but ripen prematurely, and are comparatively worthless.—A. B.

Grevilleas.

THE genus *Grevillea* is a peculiar one, and especially interesting for the strange forms of the flowers and their evident peculiar adaptation for cross-fertilisation. Beyond this, however, several species possess characters of real value to the gardener, being free in growth, graceful in habit, and bearing bright, though small flowers. The proportion of useful species is very small compared with the large number of forms known, and of which few are in cultivation. About 150 species have been described, but in few gardens, except such establishments as Kew, will more than half a dozen be found. Some are grown simply for the singularity of their flowers, which are often of a dull greenish or yellowish white, the habit stiff, ungraceful, and the plants of very slow growth. Others, however, possess quite the opposite of these characters—attractive flowers, neat, compact, yet free habit, and quick growth.

They are all natives of Australia, and succeed well in ordinary greenhouses; indeed, some are sufficiently hardy to stand out all the winter in sheltered positions in the south or west of England. During the summer they will all succeed well outside, but except *G. robusta* they are not much employed for outdoor bedding. They are much better suited for the shelves or stages of the greenhouse, where they invariably attract much admiration when in good condition. Some may be raised from seeds, which are usually imported, as seeds are rarely produced in this country, but the chief of those described in these notes are easily increased by cuttings. The best method to be adopted with each will, however, be mentioned under their respective names.

G. Thelemanniana.

One of the most useful and graceful of the forms in cultivation known to me is that represented in the woodcut. It is almost constantly in flower, but is especially fine at the present time and onwards for several months. It is also readily increased by cuttings, which strike in a cool temperature if inserted in autumn. The moderately firm shoots, 2 or 3 inches long, should be selected, neatly cut at the base, and trimmed. Prepare a compost of light loam, peat, and sand in about equal parts, finely sifted, and place it rather firmly in the pots, which have been previously well drained. Surface with fine sand, and insert the cuttings; water carefully to settle the soil round them, place a bell-glass over them, and transfer the pots to a cool frame or house near the glass, but where they can be shaded if necessary. There they can remain until spring, requiring little attention in the meanwhile. By that time most of the cuttings will have formed roots, or callused at the base, and may be carefully potted singly in similar soil.

The plant is very graceful in habit, the branches being slender, and having a drooping tendency. The leaves are pinnate, with linear divisions, and bright green. The flowers are borne in pendulous dense racemes, 3 or 4 inches long. They are bright deep rose colour, and yellowish at the tip, with the long filiform style bright red. It has been figured and described under the name of *G. Preissi*, and seeds were sent to Kew by Mr. Du Boulay of Perth, South West Australia, bearing that name, about 1869. The plants produced from these seeds first flowered in 1870. The species was found by Preiss at Drummond, near Perth. It is said to attain the height of 5 feet or more in its native country.

G. ericifolia.

A pretty form with very neat flowers, the lower part of which is bright red, the upper greenish yellow, the styles being long and red, and they are borne in short loose racemes. The leaves are about an inch long, linear, dark green, and the habit of the plant is rather loose, but it can easily be kept in good shape by a few light stakes. The flowers are freely produced, and the plants succeed admirably in pots for the greenhouse; this is well shown at Kew, where both in the winter garden and the ordinary show house several specimens are noticeable. It may be remarked that seeds of this species were first received at the establishment named from Baron Von Mueller, who forwarded them from Australia, where the plant is rather widely distributed. Similar culture to that accorded to *G. Thelemanniana* will suit *G. ericifolia*, being careful at all times that the pots are well drained, as any approach to stagnation in the soil is highly detrimental to the plants. With regard to the propagation of this and other species of similar habit, it should be observed that some growers prefer striking the cuttings in slight heat, the pots being plunged in a bed under a frame. As a rule, however, this should only be adopted when the plants from which the cuttings are taken have grown in a greenhouse kept somewhat above the ordinary temperature, as if under cool treatment the method previously mentioned is usually more successful.

G. acanthifolia.

This is a very distinct form, in the foliage especially, but the flowers are by no means unattractive, being of a reddish hue, and closely set in racemes 3 or 4 inches long. As in the others, the styles are filiform, long, and pinkish, imparting to the inflorescence something of the appearance of a miniature brush. The leaves are rigid, firm in texture, cut nearly to the centre, the lower divisions being also coarsely toothed; they are dark green, and in form, as the name implies, very suggestive of *Acanthus* foliage. It was found by Allan Cunningham in the early part of the present century, and was by him introduced to England. The localities it was chiefly found in—namely, peaty bogs and the banks of rivers in Australia, would seem to indicate that it requires in cultivation a greater supply of water than its relations, but such is not the case, for it can be treated similarly to those already described.

G. rosmarinifolia.

Another of Cunningham's discoveries, and equally as attractive as the preceding. It is also additionally interesting for its comparative hardiness in the southern and western portions of this country. In some suitable positions it succeeds very well planted against a wall, and flowers freely. It is also useful for growing in pots, and produces its dense racemes of crimson-coloured flowers in abundance. The plant is of robust habit, the foliage being suggestive of the Rosemary in form, as the specific name implies, and very dark green in colour.

G. robusta.

The value of this *Grevillea* is now thoroughly established, but on quite different characters to the others, which are chiefly grown for their flowers. As is now well known, this is principally useful by reason of its neatly divided foliage, quick growth, and adaptability for decorative purposes. It is also largely employed in subtropical bedding, for which it is especially suited, as a specimen of good size can be soon obtained. Plants are chiefly raised from imported seeds sown in light soil in heat; and if this be done in autumn, the plants being potted and encouraged to grow vigorously, specimens a foot or more in height can be secured by the following spring. It is worthy of note that the first plant introduced to this country was sent to Kew by Allan Cunningham, and for some time that was the only one in England. What the introducer then wrote respecting it is interesting and worth quoting:—"This noble species of *Grevillea* on the banks of the Brisbane river vies in size and stature with the *Flindersia*, *Oxleya*, and other large forest trees, but by none is it surpassed in height in its native woods except by the *Araucaria* of this region. Some aged trunks of *G. robusta* I have found 9 feet in circumference, so that it is probably the largest tree of the order that has yet been discovered, surpassing the *Knightia* of New Zealand and the *Orites excelsa* of Port Macquarie. From its deeply dissected foliage and the silkiness of the under side it has obtained the name of Silk Oak among the Pine-cutters of Moreton Bay; but its timber, which is of a tough fibre, has not been appropriated to any use." Respecting its quick growth, in some of the colonies where it has been planted I have been credibly informed that specimens have attained the height of 50 feet in ten years.

Of the numerous other species known few are in cultivation, and few perhaps possess any particular value to horticulturists. *G. punicea* has the brightest flowers (deep red) of any known to me, but I am uncertain if it is now in cultivation. *G. Hilli* is a strong-growing form, introduced about forty years ago, and certificated by the Royal Horticultural Society in 1862. It is somewhat strange that of all the numerous members of the *Proteaceæ*, such as *Banksias* and others, which were at one time cultivated in large collections, *Grevilleas* are now the only plants generally represented in gardens.—L. C.

Tulips at Cork, Ireland.

A CORRESPONDENT from the district where Mr. Wm. Baylor Hartland so successfully cultivates acres of the co. Cork soil, and produces magnificent Irish Tulips, has been prompted to send what he considers a list of the finer varieties. All of them are grown in Mr. Hartland's nurseries at Ard Cairn. His concise list includes *Aximensis*, a glossy crimson gold Tulip with green base; *Buonventura*, orange and red striped, pointed shaped flowers; *Riebersteiniana*, is yellow tipped with orange; *Billietiana* (type), from Savoy, is well known as a lovely yellow and gold; while *B. Sunset* (as grown at Kew Gardens) is a pretty dwarf variety, and received an

award of merit at the Temple Show. *T. Billietiana Cloth of Gold* has more of yellow than the preceding. *Didiera* (type) is very brilliant, with dark central blotch; *Maiden's Blush* or *Picotee*, with waxy white petals, faintly edged with bright pink, is exceedingly beautiful and popular; *elegans alba* is satiny white with more narrowly edged petals.

Another distinct Tulip is *elegans maxima lutea*. This has the colour of *Eschscholtzia californica* with stiff pointed petals. *Tulipa elegans lutea*, the Leghorn Bonnet, is glistening satiny yellow, and very beautiful; *Tulipa flava* is a well known late Dutch yellow, and was for a time in confusion; *Gesneriana alba*, white with rich magenta edge, is sometimes confused with *Narbonensis alba*.

Amongst other vigorous and reliable, as well as beautiful, varieties of May-flowering Tulips at Ard Cairn were—*Bouton d'Or*, of a buttercup colour, with dark anthers; best of its class. The variety named *John Ruskin* cannot be described, there is so much of *Turner* and *Ruskin* in it. The *Lizard* is a beautiful blended flower of *Fairy Queen* type; while *Nigrette* is grotesque as a black Tulip, and is exemplary of how the black and white race are brought together. The name of *Gipsy Queen* was accorded to the noble Tulip of this name on account of the bronzy shade, the copper colour of the ancient Americans. *La Perle* comes from *The Fawn*; it would be hard to judge only for their break.

Bouquet Rigaut furnishes a fine, stiff, well set up flower that requires sunshine to get it out; the colour of *The Fawn* describes itself. *Ixioides* has a splendid black base and yellow petals; *neglecta picta*, yellow and bronze shades, lovely tints with dark

centres; *Parisian Yellow*, yellow with pointed petals; *spathulata*, the old Dutch *Gesneriana* type, corrected by Mr. Baker of Kew as *spathulata*; *spathulata aurantiaca*, brilliant orange red, with rich centre of old gold; *spathulata aurantiaca striata*, feathered and striped with gold; *spathulata aurantiaca maculata*, rich orange, with a dark base, very beautiful; and *spathulata Bronze Queen*, rich bronze in full sun, and is unique. The three Tulips named—1, *Shandon Bells*; 2, *York and Lancaster*; and 3, *Silver Queen*—have been in confusion by the Dutch for years, yet they have quite distinct, goblet-shaped blooms of the highest merit. *Othello* is a velvety crimson resembling *Bouton d'Or*, of good shape, and is a fine show flower; *Summer Beauty*, a very beautiful lilac rose streaked with magenta, flower impossible to correctly describe; and last of all comes *Snowdon*, a pure white bloom, globular shape, becoming pink as it dies off.

Figs Growing in the City.—In the courtyard of the Aldgate Ward Schools in the City of London there is to be seen at the present time a beautiful Fig tree in full leaf, with at least twenty-five good sized Figs developing upon it. The tree is believed to be a relic of the old abbey of the Holy Trinity, which existed for a good many centuries. The abbey was abolished by Henry VIII.



GREVILLEA THELEMANNIANA.

NOTES

NOTICES

Weather in London.—Thursday, Friday, and Saturday, remained bright, with a fair amount of sunshine, and fresh, cool breezes blew briskly. The temperature on Sunday reached 80°, but became cloudy toward evening; little rain, however, fell. Monday was hot and dry, as was Tuesday; while before going to press on Wednesday some rain had fallen, and more appeared imminent.

To Preserve Nature.—There has long been a feeling in Devonshire that stern action ought to be taken to prevent the rifling of the hedge rows in the beautiful lanes, not only by hawkers, but by visitors. With Lord Clifford of Chudleigh, chairman of the United Devon Association at its head, there has been a movement which has culminated in the formation of the Western Counties Ferns and Wild Plants Preservation Committee. Amongst those who have promised support are Lord Morley, Lord Sidmonth, Lord Ebrington, Sir C. T. D. Acland, Admiral Parker, Col. Vaughan, Mr. W. F. Collier, Captain Templer, and Mr. W. H. Kitson.

Kew Gardens.—Every rood of the 251 acres comprising Kew's Royal Gardens is parched almost like the Sahara. The grass in the outlying parts of the Arboretum is brown and winnowed; so dry, indeed, that half an acre of it was burned last Sunday by the negligence of some passing smoker. Long lines of hose-pipes that shower forth a spreading spray are being used, and have been, for months past, on the more prominent glades, vistas, and fore-front lawns. Kew soil, is however, little superior to pure sand, and if one day the Thames flooded the whole garden, the following day the surface soil would probably again represent dust. The Iris collection was at its best condition about June 10th and 11th, but drought is causing the flowers to quickly fade. Rhododendrons, Roses, Cytisus, and alpine are the most conspicuous of the hardy subjects throughout the grounds.

Covent Garden Market.—This great fruit, flower, and vegetable centre is as interesting as a very good horticultural show at the present time of year. All the newest, including the lesser known, vegetables are offered in varying quantities. The shelling of young Peas by dozens of women, who sit so as to form three sides of a square, and throw all the shells into a central heap, while retaining the Peas in bowls held in their laps, is amusing and highly entertaining to anyone unaccustomed to the sight or their coster twang. Strawberries and Cherries were selling on Wednesday last at 1s. the punnet in the Central Row. On costers' street barrows good samples of the same were freely sold at 3d. per lb. With the costers it is a case of small returns, but quick and numerous. Good eating Apples fetch 6d. a lb. Bananas, Pine Apples, Pomelos or Grape fruit (3d. each), Limes, Peaches, and Apricots are all offered in more or less amount, and good. Shirley Poppies, especially rosy-pink varieties, Cornflowers, Spanish Irises, and *Lilium Harrisii* are on the market in great display, besides, of course, Orchids and flowers from tender exotics in lesser quantities.

Fruit Prospects around Cardiff.—Apple and Pear trees in this district flowered profusely this year. There was no frost nor biting east winds to injure the trees during the time they were in bloom, and the result is that mostly all the varieties of both have set a fine crop of fruit. Notwithstanding the high temperature, long drought, and small rainfall (0.96 inch) experienced in South Wales during the month of May, the foliage of the trees never looked greener nor freer of insect pests of any kind than they do now in the gardens here. The surface of the ground for at least 6 feet round the trees was heavily mulched with rough stable litter some time before the new year, and they have not suffered in the least by the drought. The fruits are swelling fast, and to judge from present appearance Pitmaston Duchess Pear and many others will require to have their branches supported very soon, or they will be injured by the weight of fruit. Strawberries are a good crop, the plants were not injured while in flower, and the crop is going to be heavy; but the drought has been sore on them (although the ground was mulched with stable manure between the rows before Christmas), and we have been obliged to give them two or three heavy soakings to save the crop from being small undersized fruits.—A. PETTIGREW, *Castle Gardens, Cardiff*.

Excerpta and Variorum.—It is said that a French grower has developed a *Primula sinensis* with yellow blooms. * * A box of wild Strawberries has been picked on the railway embankment between Barnstaple and Lynton.

Royal Horticultural Society.—The next Fruit and Flower Show of the Royal Horticultural Society will be held on Tuesday, June 18th, in the Drill Hall, Buckingham Gate, Westminster, 1 to 5 P.M. A lecture on "Gardening in the London Parks" will be given by Mr. M. J. Wheatley at three o'clock.

Malformed Apple Blossom.—Mr. Charles Pocock, of Wincanton, sends us a double Apple blossom, with the following remarks:—"This monstrous Apple blossom was taken from an old espalier tree of D. T. Fish. This is, as you will see, not only very large, but apparently very double, and is, of course, abnormally late, as the fruits on the tree are already of good size. I have never before met with such a specimen." We do not recall such a remarkable instance of doubling the flowers were exactly like the half-expanded blooms of *Rosa rugosa* Blanc de Coubert.

Tax on Fruit.—A Treasury decision is required as to whether preserved Apricots are liable to duty or not. At Revenue headquarters it is thought that they are. Dried Apricots imported have been and are liable to a tax of 7s. per cwt., but it is urged that tinned Apricots can hardly be considered dried fruit, and there is a sense in which they are fresh; no duty is levied on fresh fruit. In addition, the trade are asking if Apricot pulp is liable, for, to be consistent, if duty is levied on tinned Apricots the pulp cannot escape. Californian fruits and Plums preserved in sugar, whether in bottles containing other fruit or not, are to pay a duty of 7s. per cwt.; the term "Plums" includes Apricots and Green Gages.

Japanese Dwarf Trees.—The following are the prices paid for specimens of Japanese dwarfed trees which, for the moment, form a public fad:—A dwarf Juniper tree, eighty-five years old and 23 inches high, fetched 50s. A couple of Larches, quaintly trained into the shape of a fan and saki bottle, were absurdly cheap at 10s. Better prices were realised when the miniature Cedar trees were sold. Some of these were beautiful specimens; one of them, 120 years old, fetched 13 guineas. A specimen of the golden variety, 150 years old and 2 feet 4 inches high, sold for 14 guineas. A "Maple on Stilts" was one of the most remarkable of the many curiosities. Some of its branches bore red leaves, others were covered with green leaves. The tree was raised on four exposed roots, 10 inches high, giving it the appearance of being on stilts. The plant was sold for 10 guineas. Some Larches, grown in the shape of a Chinese junk, fetched £4; others, trained to represent a stork, were sold for £2; and two other dwarf Cedar trees were knocked down at 11 guineas apiece.

A Plant Exhibitor in Good Form.—Mr. W. Vause of the Milveston Nurseries, Leamington, has during recent years been a prominent exhibitor at the leading shows. Starting on a modest scale, he has gradually, yet surely, "forged ahead," till he is now regarded by our veteran plantmen and "groupists" as a foeman worthy of their steel. During a recent visit to the above nursery I found Mr. Vause busy, as an exhibitor usually is, and preparing for the coming struggle with the keenness of an old campaigner. Conspicuous among the many fine plants I noticed some magnificent examples of *Anthurium Scherzerianum*. They were huge specimens with an enormous number of flowers. It was interesting to note the various forms of that fine *Anthurium*, some of the flowers being great width and substance compared with others. The best varieties had, however, been selected to form large specimens, and they will no doubt prove of great service to Mr. Vause during the coming struggles. The plants were potted in the usual open compost, and immense quantities of water at the roots, and a moist warm atmosphere, were items of culture which had contributed to success. *Phænocomas* are usually conspicuous objects among flowering plants at the summer shows, and huge specimens will be sent out from Leamington. *Ericas* and *Statice* will also be staged in good condition. The above, when arranged in combination with Mr. Vause's fine Palms and Crotons, will at various seasons form a series of most attractive exhibits. I also noticed there was no lack of suitable materials for forming groups, and several exceedingly fine forms of *Lælias* and *Cattleyas* should prove of great service at the earlier shows. I venture to predict that during the coming season Mr. Vause will fully maintain, if not add to, his reputation as a plant grower and groupist.—H. D.

Staking Runner Beans.—Regarding Mr. W. R. Raillem's query on page 454 of the Journal for May 30th, whether we advise staking as against pinching, we had hoped our calendarial writer would have answered, as the advice about staking is his. In the meantime, failing his opinion, we may state our views to be, that where stakes can be cheaply secured (as they can on most large estates), it certainly is the best plan to train the Runner Beans upon stakes, and not to pinch. On the other hand, in gardens where tall and suitable stakes are not easily or cheaply procurable pinching may be resorted to, and large crops of Beans can be obtained; also in field culture, where the rows are close together, pinching is advisable.

Worthing as Fruit Centre.—Worthing has long enjoyed the reputation of one of the most important fruit producing centres in the kingdom, and the extent to which the culture is carried on is indicated in the latest statistics, which show that there are now in the borough about 850 glass houses, which, placed end to end, would extend a distance of twenty-four miles; and that more than 120 miles of pipes are used in the heating process. The growth of the Tomato shows a considerable diminution, but Grapes, Cucumbers, and flowers continue to be grown in immense quantities, and about 90 tons of produce are consigned weekly to Covent Garden and to Birmingham, Manchester, Glasgow, and elsewhere. Very early in the year, when the scarcity of the crop was sufficient to account for inflated prices, from 16s. to 18s. a pound was easily obtainable for Strawberries in the wholesale market.

Exterminating British Flora.—The "course" for 1901 of the Essex Technical Instruction Committee for Field Studies in Natural History is intended to instruct teachers in the elements of botany by means of rambles in search of wild flowers. One leading feature is a vacation course of ten days in the New Forest. "The teachers," writes Prof. L. C. Miall to "The Times," "are to be accompanied by local guides, and their attention is particularly directed to the rarest species, which are specially named, as well as the places in which they are known to grow. To collect, dry, and identify plants is the chief aim of the leaders, who not only urge every teacher to make his own collection, but suggest that duplicate plants will prove useful for 'special fascicles.' It seems to me lamentable that teachers should be advised to study natural history by schedules, and to gather plants merely in order to name and dry them. I imagine that they will be worse and not better for working through so dry and barren a course. All of us, whether we are concerned with the teaching of botany or not, have an interest in the preservation of our native plants. The Essex Committee is simply organising a raid upon plants which are already near to extinction. I hope that they will fail to discover the rarities which they selfishly covet; their enterprise is, I venture to say, an injury to natural history and to education alike."

The Raid upon Wild Flowers.—As a supplement to Professor Miall's letter in "The Times," which we print in part under the heading "Exterminating British Flora," Mr. Herbert Goss wrote to say that if the programme of the Essex Technical Instruction Committee for field studies in natural history be carried out, such very rare and local species as *Gladiolus illyricus*, *Isnardia palustris*, and *Spiranthes æstivalis* could be extirpated in a week. *Isnardia palustris* has disappeared from Buxted, Sussex; and from Petersfield, East Hampshire, and is now only found in a few places in the New Forest. *Gladiolus illyricus* is confined to a few localities in the Forest, but it is there more or less protected by its habit of growing among the bracken (*Pteris aquilina*). With the exception of one locality in Wyre Forest, Worcestershire, that beautiful Orchis, *Spiranthes æstivalis*, is confined, in the United Kingdom, to two bogs in the New Forest, and in one of these it has become almost extinct. The three species above named are, in Professor Miall's words, "already near to extinction." * * Mr. J. H. Nicolais, secretary to the Technical Instruction Committee of the Essex C.C., and Mr. D. Houston, F.L.S., the botanical instructor, have issued a strong disclaimer to Professor Miall's statements. It is not, they explained, the intention of the Essex ramblers to carry a horde of ignorant vandals into the secret places of the Forest, there to root up and carry away rare specimens of plants. "I hold quite as strong views as Professor Miall himself," said Mr. Houston. "The whole spirit of our teaching is against the mere collection of rare plants. As it happens, I am not a collector myself, the people who will go with us to the New Forest will be, for the most part, skilled students who have attended our weekly rambles and lectures for years past. In the syllabus, to which Professor Miall objects, we twice urge the members of the party to refrain from uprooting rare or scarce specimens."

Flowers in Season.—There seems to be no limit to the variation and colour contrast amongst the new strains of hybrid *Aquilegias*. The blue and white of the old Siberian *A. glandulosa* has become suffused with the red and orange of *A. canadensis* and *A. chrysantha*, so that now we have such lovely presentations as creamy white petals and deep lavender spurs and sepals; canary yellow and russety-crimson; primrose and "blotting-paper" red; and a great range of other very pleasing, harmonious, or agreeable contrasts. Messrs. James Veitch and Sons of the Royal Exotic Nurseries, Chelsea, forwarded a delightful bunch of their hybrid strain last week, and it was their flowers that the above notes describe.

Royal Botanic Society.—His Majesty the King has graciously consented to become the patron of the Royal Botanic Society, in succession to her late Majesty Queen Victoria, its first patron. * * A course of ten lectures on "Commercial Crop Cultivation in Greater Britain," by Mr. R. Hedger-Wallace, are arranged to take place in the Society's gardens on Friday afternoons at four o'clock, from June 7th to August 9th. * * On page 461, May 30th, it is stated that Mr. E. F. Hawes is superintendent of the above society's gardens. This is incorrect; Mr. J. Bryant Sowerby is secretary and superintendent, while Mr. Hawes is instructor in horticulture. On the page already quoted, it is also stated that the gardens are four acres in extent. This refers to the medicinal or herb garden; the total area, we are informed, is about eighteen acres.

Pyrethrums from Langport.—A selected consignment of *Pyrethrum* varieties was received by us last week from Messrs. Kelway and Sons of Langport. In this delightful posy there were some very beautiful singles, and none superior to James Kelway, with rich cherry-amaranth ray petals and golden disc. Of a paler shade is General Gaselee, which is also first-rate; and paler still (lilac-crimson) is the variety named Grizel. Single *Pyrethrum* Countess of Onslow is delicately beautiful, and of a pale rose-lilac cast, and is, moreover, faintly odorous. Queen of the Whites is very pure and lovely, besides producing a strong flower; and equalling any of the preceding is the variety named Alice, whose deep pink flowers, with their orange disc, are pleasingly attractive. The doubles are not so graceful. We are rather gratified than regretful to know that taste favours the much more æsthetic single varieties. At the same time, they are very showy, and well nigh indispensable in the hardy plant borders.

May Weather at Belvoir Castle.—The wind was in a northerly direction twenty-two days. The total rainfall was 1.24 inch, this fell on eight days, and is 1.12 inch below the average for the month. The greatest daily fall was 0.50 inch on the 25th. Barometer (corrected and reduced): highest reading, 30.483 inches on the 23rd at 9 P.M.; lowest reading, 29.240 inches on the 7th at 9 A.M. Thermometer: highest in the shade, 76° on the 29th; lowest, 28° on the 5th. Mean of daily maxima, 60.73°; mean of daily minima, 40.74°. Mean temperature of the month, 50.73°; lowest on the grass 27° on 5th, highest in the sun 135° on the 29th. Mean temperature of the earth at 3 feet, 49.48°. Total sunshine 220 hours 30 minutes, which is 32 hours 37 minutes above the average for the month. There was one sunless day. May was unusually dry, with a temperature slightly above the average, and a large amount of sunshine; no rain fell for a period of sixteen days.—W. H. DIVERS.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
1901. June.		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
Sunday .. 2	S.W.	deg. 62.4	deg. 57.0	deg. 71.3	deg. 33.8	Ins. —	deg. 60.1	deg. 57.2	deg. 53.4	deg. 47.5
Monday .. 3	S.W.	60.1	55.5	69.5	47.8	—	60.6	57.5	53.4	37.9
Tuesday 4	W.S.W.	52.9	51.8	71.3	47.3	—	60.0	57.8	53.7	37.0
Wed'sday 5	S.W.	62.6	55.5	75.6	49.8	—	61.5	58.0	53.9	38.2
Thursday 6	N.N.E.	62.9	58.0	72.2	55.5	—	64.0	58.6	54.2	49.3
Friday .. 7	E.S.E.	59.7	51.8	68.5	46.5	—	62.3	59.2	54.5	36.0
Saturday 8	E.S.E.	60.1	53.3	71.0	48.0	—	61.6	59.1	54.7	40.9
MEANS ..		60.1	54.7	71.3	47.0	Total —	61.4	58.2	54.0	41.0

Another week of hot dry weather, with strong winds on two days.

Clematises.

It is forty years ago since Mr. Geo. Jackman of Woking first employed his attention to hybridise Clematises. At that time these handsome and beautiful garden plants were seldom grown. The species from which the showy present-day varieties have come were all attractive enough, but gardening had not then developed sufficiently, and, as pointed out, no one had hitherto become an apostle on their behalf. The rise to popularity of nearly all of the best liked garden flowering subjects now so much sought after, owe their popularity to the past efforts of certain enterprising commercial cultivators.

Our illustration of a group of Clematis Jackmanni varieties represents the exhibit furnished by Messrs. Richard Smith & Co. of Worcester, at the recent Temple Show, and toward the right hand some of Messrs. Frank Cant & Co.'s beautiful Roses are visible. The Worcester firm always exhibit magnificently grown and splendidly

Sweet Peas in Pots.

THE great popularity of these showy and fragrant annuals is undoubtedly still increasing, and now that we have a National Sweet Pea Society we may look for wonderful developments in the future. Notwithstanding all that has been said to the contrary, no one can foresee what improvements may yet be made in this "queen of annuals," which, like the Rose, is the flower of all. One noticeable fact in connection with the popularity of the Sweet Pea is, that each year they are more largely grown in pots for supplying cut flowers during April and May. The finest pot-grown examples I have seen came under my notice recently when visiting the gardens at Kington House, the residence of Lord Willoughby de Broke. The plants were from 5 to 7 feet in height, many of them having stems as thick as ordinary lead pencils. The foliage was large, and of a beautiful deep green colour, and the flowers of the finest quality. Mr. Hall, the head



TRAINED CLEMATISES AND POT ROSES.

trained Clematises at the Temple Show, and at their nurseries there is a numerous selection of this genus of plants in all sizes and stages of growth, including the best of both old and new varieties. On the occasion when this group was photographed, they staged such delightful sorts as the delicately pink tinted Marcel Moser and Marie Lefebvre, with about thirty great flowers on a balloon shaped plant. The specimens were all about 3 feet high and as much in breadth. La France was one of the richest and most magnificent, being furnished with blooms of a rich purple colour; Sensation is lilac-coloured; Fairy Queen, white and beautiful as sun-illuminated marble; Excelsior is more deeply tinted than Sensation; Marie Van Houtte affords another grand white Clematis, with petals possessed of much substance; Lady Caroline Neville of a pale distinct shade of lavender, and Mrs. Geo. Jackman, white; besides the handsome Glory of Worcester, and Gloire de St. Julien, were each handsome and pleasing varieties of the singles and semi-doubles. The group also contained flowers of true double character. The rise and early successes in hybridising this section of the genus was interestingly recorded by our correspondent Mr. Richard Dean, V.M.H., on page 190, March 7th this year.

gardener, informed me that the seeds were sown early in January, but he prefers autumn sowing. When the plants were well rooted in small pots, three potfuls were placed in a 10-inch pot, the soil employed being rich and open, having a little bonemeal mixed with it.

When well established in their flowering pots, the plants were grown in perfectly cool structures, and by the time the first flowers appeared the soil was packed with roots, and frequently required watering two or three times daily. Liquid manure and soot water have been freely used; indeed, Mr. Hall considers that high feeding, abundance of water, and a light syringing daily during bright weather are important factors in securing success.

The flowers have been so highly prized that all expanded blooms have been regularly picked daily, and that practice has undoubtedly helped to prolong the flowering period, as well as to add vigour to the haulms. Mr. Hall had just finished picking when I arrived, and the large bowl of delicately tinted flowers which met my gaze would, I think, have gladdened the eyes of the most critical of critics. A few of the varieties I noted down are the following:—Countess Powis, Gorgeous, Venus, Triumph, Mars, Sadie Burpee, Prima Donna, Lady Nina Balfour, and Salopian.—H. D.



LOCKINGE PARK: THE RESIDENCE OF THE LATE LORD WANTAGE, V.C. (See note on page 505.)



The Californian Trees.—No tree in the United States has reached the "sky-scraping" altitudes of the record Eucalypti, but several of the Sequoias of California exceed 400 feet in height, and have a girth of 90 feet at the base. There are only about 500 of these survivals of a past age, and many are over 3000 years old. They sprouted about the time that Troy was destroyed and Solomon's Temple was built, and were in the "yellow sere of life"—I heard it thus quoted in the speech of a town councillor—when Alexander was weeping for lack of new opportunities. In the Mariposa Grove is a tree measuring 100 feet round the base, and near by is a cut stump 31 feet in diameter. Six sets of quadrilles have been danced at one time on this stump.

Poisonous Garden Plants.—Among the garden plants commonly in vogue which possess a poisonous nature botanists mention the Jonquil, white Hyacinth, and Snowdrop, the Narcissus being also particularly deadly, so much so, indeed, that to chew a small scrap of one of the bulbs may result fatally, while the juice of the leaves is an emetic. The berries of the Yews have killed many persons; and it is pretty well known nowadays that it is not safe to eat many Peach pips or Cherry kernels at once. The Lobelias are all dangerous, their juice, if swallowed, producing vomiting and giddiness, with pains in the head. Lady's Slipper poisons in the same way as does Poison Ivy. The bulbs seem to be the most harmful. Lilies of the Valley are also as much so. There is enough opium in red Poppies to do mischief; and the autumn Crocus, if the blossoms are chewed, causes vomiting and purging. The leaves and flowers of the Oleander are deadly, and the bark of the Catalpa tree is very mischievous; the Water Dropwort, when not in flower, resembles Celery, and is virulent.

Tulipa "Brunhilde."—Years ago this beautiful, early flowering, single Tulip was well known under the name of "Unique," so that "Brunhilde" is simply a synonym of the original, the former name. At the Royal Horticultural Society's meeting, on May 7th, an award of merit was bestowed upon it when presented before the Floral Committee by Messrs. Barr & Sons, King Street, Covent Garden, W.C. Mr. Richard Dean, V.M.H., called attention to the older name, Unique, under which this Tulip used to be known. The committee evidently did not all agree with Mr. Dean's verdict (which was supported by Mr. J. H. de Graaff, and in a letter the Messrs. Barr inform us that the names are synonymous), for the name "Brunhilde" was allowed to pass. Messrs. Hogg & Robertson, of Mary Street, Dublin, on the same occasion exhibited this Tulip under the name of "Pottebakker White and Gold," bearing which appellation this Tulip is largely cultivated in Holland. Our illustration was from a flower from their exhibit. There are thus three names for the identical variety, and these names are:—(1) Tulipa Brunhilde, alias (2) T. Unique, alias (3) T. Pottebakker White and Gold. The illustration defines its handsome form; and the colour is a lovely soft creamy-white, with yellow beams running up the centre of each petal, and the base is also yellow.

English Hedges.—At no time of the year does the contrast in the scenery of England and most Continental countries appear in a more characteristic light than now in early summer, when all verdure is at its most luxuriant point of growth; and the hedges, which are our most conspicuous point of difference, border every field with a succession of rich blossoms. It is true, says "The Globe," that the space subtracted by these hedges from the total area admitting of cultivation is undoubtedly considerable, but the gain to the island's beauty is almost incalculable. Every hedge bank and field corner is a little garden of its own, with a special charm derived from the flowers, birds, and insects that dwell in it; and most people who know the broad expanses which fill the greater part of Northern and Central Europe will on the whole agree with the remark once overheard from an Englishman at the end of a three months' tour abroad, that "those foreign parts don't seem to have any real country, only scenery in places." Daudet, a Provençal, is said, when his attention was called to the luxuriant beauty of the Christ Church meadows at Oxford in May, to have exclaimed, "Vert rhumatisme!" with a horrified shudder; but to Englishmen much of the beauty of this island will always seem to be due to its moisture-loving fences and field corners.

Rubus ulmifolius variegatus.—For use in any part of the garden, on walls, pillars or trellises, this golden Rubus is commendable. The foliage is tripinnate, each lobe being like the individual leaf of an English Elm. The central portions are green, the veins being a bright golden colour. The growth is free, and the shrub is in every respect very beautiful.

An Ivy Wreath.—Design makers are frequently called on to furnish an Ivy wreath as being appropriate and fitting the sentiment of funerals. These wreaths, after being made in the ordinary way, with Ivy leaves, can have a few loose sprays of Ivy attached, with sprays of Euonymus variegatus, flowers of Laurustinus, a few Violets, white Camellias, and just a bit of Jasmine. It will still remain an Ivy wreath, and as beautiful as any floral piece it might be compared with.

Ivy-leaved Pelargoniums.—The variety Mrs. W. H. Martin is a novelty in Ivy-leaved Pelargoniums, and a decided acquisition it is. The trusses are fairly strong, and of moderate size. The colour, however, is the surprise, and here lies the beauty and interest. The colour at its best is a pale mauve-lavender, but fades to silvery lilac. It received an award of merit on June 4th. Leopard has stronger and larger flowers of a sweet and attractive deep rose-lilac colour, blotched toward the centre with deep crimson. The trusses are large, though a trifle lax. It, too, received an award on June 4th. Mrs. J. G. Day, with compact trusses, is a brilliant crimson scarlet; Rycroft Surprise is rosy pink; and Souvenir de Chas. Turner, which is well known, is brilliant cerise.

Vines.—These are extensively cultivated in the island of Corfu, on the plains along the mountain sides, and the failure of the Vine or the Olive crops vitally affects the well-being of the islanders. It is therefore, states a daily paper, on account of the ravages caused last year by Peronospora on the Vines and Dacus oleæ on the Olives that Corfu is now suffering. The wine exported in 1900 was, as already stated, from the vintage of 1899, and its value amounted to £28,889, while the value of wine exported in 1899, and which belonged to that year's crop, amounted only to £15,483, showing a decrease of £13,406 over that of 1899. This large difference is to be attributed, however, to the high price asked for it by the proprietors, owing to the entire destruction of the wine crop of 1900.

The Olive Tree.—Like other fruit trees, the Olive tree has many enemies to contend with. Besides the birds, there are numerous insects which attack the fruit, the wood, and the leaves. The most dreaded of these, says our Consul at Corfu, is a small fly called Dacus oleæ, which is about half the size of a common house fly. The female has a sting like a wasp, with which she punctures the fruit where she deposits her eggs. It is calculated that a single fly will thus destroy 300 or 400 Olives. The only known remedy is to gather the fruit early, and by crushing it at once destroy the larvæ. The prospects in August and September last seemed most favourable, and it was expected that from 200,000 to 250,000 barrels of oil would be produced, but, owing to the damage caused by the fly, added to the continuous heavy rains and the prevalence of south winds, the fruit fell to the ground prematurely, and the yield amounted in all to about 80,000 barrels.

Rose Papa Gontier.—Mr. Neish, the much-esteemed gardener at Caldy Manor, Cheshire, the residence of Mr. J. Bruce Ismay, grows this very beautiful Rose to perfection; and if handsome foliage, robust growth, and exquisitely formed and scented buds of the purest rose colour count for anything, then by all means let indoor Rose growers include the variety Papa Gontier. Originally Mr. Neish received a dozen plants from abroad, weakly enough, with the strange command that they must be grown in large tubs. These they were placed into, but not without a certain amount of misgiving on Mr. Neish's part. However, they commenced to send out wonderful growths and huge bunches of flowers by the score, so much that the plants now take up the centre of a large house, making a marvellous display. During the period of growth and flowering slight warmth is given, afterwards they are cut back and allowed to make their summer growth outside, and placed in the house in January after the Chrysanthemums are over. The idea and the success attending the use of these large tubs has so pleased Mr. Neish that he intends to try other varieties under the same conditions. In conclusion, I may state that the flowers of this Rose have not the substance of R. Méréchal Neil or R. Catherine Mermet, but the effect, as I saw them, was perfectly entrancing, both in the bud state and when full blown.—A VISITOR.



Young Gardeners' Pay.

A "Modern Thinking Gardener," on page 481, leaves, I think, but one question for me to answer—viz., "Is the garden labourer a more skilled man than his brother, the farm labourer?" I venture to reply—yes, decidedly so. As regards the personal matter he introduces, I am happy to say that those who know me best would be least disposed to agree with him.—AN OLD BOY.

A Schedule Blunder.

WILL you allow me a short space in reply to the suggestion of Mr. Crump, that the original framers of the schedule should give their opinion of the regulation in a class for twelve bunches of Grapes, and to state that their opinions could not be more clearly defined than in Mr. Crump's letter, which really covers all that can be said?

It was the wish of the committee to frame a class as free as possible from restriction, so that Grape growers could meet on equal grounds as competitors; and after the experience of the society in 1899, when, in addition to the judge's award, legal opinion had to be taken as to the wording of this very regulation before a final decision could be arrived at, the committee decided that this year the four varieties named could only be shown as Muscat of Alexandria. Consequently any exhibitor would be free to stage, say, one Muscat of Alexandria, one Canon Hall, one Bowood Muscat, and one Charlesworth Muscat as *one variety*; or, say, two Muscat of Alexandria and two Canon Hall as *one variety*, or any other combination, provided that no more than four white Muscats are staged in the twelve bunches.

The regulations had most careful consideration, and it is scarcely a compliment to the committee that Mr. Iggulden should publicly announce a schedule "blunder," which by the best dictionaries means, "To make a gross mistake through mental confusion." The committee have simply decided that for the purpose of this competition alone the regulation applies, which they have a perfect right to do, especially as they make no such stipulation in the collection of fruit and the other Grape classes.—H. W. ADNITT, *Hon. Sec., Shrewsbury*.

I HAVE neither the time nor the inclination, at this busy season, to wade through the mass of irrelevant matter brought into this subject, but must state that Canon Hall and Muscat of Alexandria are as distinct as Duke of Buccleuch and Buckland Sweetwater, and that a consistent schedule which brackets these two Muscats as too-much-alike should pay the same compliment to the two Sweetwaters. Soon after the great Grape show at Shrewsbury, two or three years ago, I wrote in this Journal to the effect that, had it not been for the wording of the schedule in the matter of Canon Hall, I could have entered for the great Grape class, and was given to understand that there was a mistake in the wording, which would be rectified another season. One correspondent, who, I hope, for the credit of the United Kingdom, is neither British nor Irish, would not encourage Canon Hall, because it is difficult to grow. You and I, Mr. Editor, can remember the time when Muscat of Alexandria was thought difficult to grow, but to-day it is grown better than Black Hamburg, and I hope we may live to see Canon Hall shown in compact bunches half a yard long, with berries averaging 4 inches in circumference. Would the great Shropshire Society, which has done so much, defer this desirable consummation? —WM. TAYLOR.

OF course Mr. Crump is not in a "tight corner," but if he has made everything so beautifully clear, why invoke the "opinions of the original framers of the schedule and others" upon the subject? Why I failed to quote the whole of a long passage in his first note was because of its great length, not on account of any wish to steal an unfair advantage. My case is strong enough without any unnecessarily long paragraphs on the subject, and which are apt to leave matters in a worse muddle than ever. Let me once more quote from the conditions governing the exhibits of twelve bunches of Grapes at Shrewsbury. "For the purpose of this competition Bowood Muscat, Charlesworth Tokay, Tynninghame Muscat, and Canon Hall cannot be shown as distinct varieties with Muscat of Alexandria. Gros Maroc and Cooper's Black are also considered synonymous."

Now the question is, Does Mr. Crump, or any of the authorities he invokes, maintain that Canon Hall is not perfectly distinct from Muscat of Alexandria? I ask for a plain reply to a plain question. Yet another question. If only one variety of white Muscat is admitted,

why not be equally severe on the black Muscats? The framers of the schedule departed from the R.H.S. wording of the similarity of so-called varieties, in including Canon Hall in the same category, say, as Bowood Muscat; and if they make unto themselves a law of their own in this direction, why not go further, and give as many points for black Muscats as they do to the whites? Perfect examples of Muscat Hamburg and Madresfield Court should receive as many points as the best bunches of Muscat of Alexandria.

I readily admit that the Shrewsbury Show is an exceptionally good display, more especially in the fruit department; but I have yet to learn that the arrangements and proceedings are so perfect that it would appear rank heresy to criticise them in any way. This for the benefit of "W." and others who may have imbibed the erroneous notion that infallibility reigns at the Shrewsbury Show.—W. IGGULDEN.

Coping for Walls.

HAVING occasion to arrange coping for a fruit wall some two years ago, I consulted several gardeners, who, without doubt, are at the very top of their profession, and they told me with one voice not on any account to have a fixed coping. Some went so far as to say that a fixed coping was worse than no protection at all; yet I read in the Journal (page 441) that by Mr. Challis, at Wilton, "glass coping is extensively adopted," and that "the coping is a fixture, and remains so always." Now, is Mr. Challis right, or are the experts? It is a question of great importance to thousands, and I hope that this note may lead to a settlement of the question. Will Mr. Challis kindly tell us how long his glass copings have been fixed, and the age of the trees they are intended to protect? I have seen many fixed glass copings near London, but I never remember seeing a good healthy tree under them.—C. C. ELLISON.

Royal Horticultural Society of Ireland.

WOULD you kindly allow me space in your columns to vent my opinion against the R.H.S. of Ireland and Mr. Brock's case? I fail to see how any true gardener could have the courage to lift a pen in defence of the above Royal Horticultural Society's action as exposed by Mr. Brock. Why was there a joint cheque issued if they considered Mr. Brock's employer the *bona fide* exhibitor (which they seemingly did) when they forwarded prizes to him? The cheque in that case was a pure insult to the employer. If Mr. Brock was the accepted exhibitor (and no doubt he was), then the joint cheque and the forwarding of the other prizes to his employer was, in my opinion, a direct snub and insult to him. On that point alone the "Royal" of Ireland deserves condemnation. If the gardeners of Ireland withdraw their support and interest in the society, what will become of it, especially those who exhibit at its shows? It is small wonder that the exhibitions held by the "Royal" are only second-rate when compared with the Ulster one and others. I also note in your last issue that Mr. Brock has never seen the medal he honestly won last November.—W. D., *Co. Down*.

A Problem in Heating Solved.

IN his endeavour to put "H. D." right, "Aqua," on page 417, has gone a little out of his depth. He was quite right in saying there is nothing new in the plan described by "H. D.," but he was quite wrong in saying it has "always signally failed." It cannot fail under certain circumstances, and there is no need to get the water to boil to force it past this kind of obstruction. I will own at once that it is inadvisable, and "H. D." is doubtless as well aware of this as "Aqua," but if the water beyond the obstruction is at a higher level than that behind it, and no air-pocket is formed, it will circulate with comparative smoothness. A much better plan than the taps referred to is to take a small pipe—a $\frac{1}{2}$ -inch lead pipe will do—to a point slightly higher than the feed cistern, as air may gather on either side the door and cause trouble, unless the small cocks were constantly attended to. So much for "H. D.'s" side of the question. As to "Aqua's" argument, this holds good if any part of the apparatus worked from the same boiler is at a higher level than the highest point in the circuit referred to by "H. D." If, for instance, a branch leaves the main flow higher up and no check valve is provided, then of course the water flows where there is least resistance, and the apparatus will be troublesome. To anyone proposing to carry out this class of work I would say, By all means avoid dips if possible; yet given immunity from the quicker circuits referred to above, or proper manipulation of the check valves, there need be no fear to dip under an awkward doorway. Only be sure and provide for the release of the air that, without a vent, must gather at such points, both on the flow and return pipes, and remember that a sharp rise immediately beyond is a great assistance in drawing the water past the obstruction.—H. R. RICHARDS, *Bristol*.

Notes on Figs under Glass.

Early Forced Trees.—These, after the first crops are gathered, should be accorded generous treatment, so as to enable them to swell the second. Trees in pots require water daily, sometimes twice a day, and some nourishing food should be applied, so as to keep them in healthful vigour. Stable and cow-house drainings must be carefully used, as they may contain little beyond urine, and should have 4 ozs. of superphosphate added to each gallon of neat liquid, then diluted with about six times the bulk of water. The contents of manure tanks are still more variable in strength; sometimes the liquid is merely coloured with manurial matter, and at others it is as dark as porter; the thing is, not to apply it too strong. Where these stimulants and nutrients cannot be had, it is a good plan to use surface dressings of fresh turf, and sprinkle some approved fertiliser over that occasionally. Planted-out trees will require water or liquid manure once or twice a week, according to the extent of the rooting area, and the roots should be mulched with rich material, so as to keep an abundance of active feeders. Syringe twice a day to keep the trees free from red spider, or at least in check, directing the force of the water against the under side of the leaves, and let the applications be thorough, as one good syringing is worth many sprinklings. Thin the second crop of fruit before it is the size of Walnuts, and in thinning reserve the largest fruit at the base of the shoots. Trees that are to be forced early another year should not be allowed to carry a heavy second crop, and none near the points of the shoots, or they will not be able to produce a full first crop of Figs another season, which is of the greatest consequence.

Succession Houses.—Trees started during the first two months of the year have the fruit ripened, and require a free circulation of air, warm and rather dry. Leave a little ventilation on constantly, so as to prevent moisture condensing on the fruit, and increase it early to dispel any that would otherwise become deposited on the fruit through the sun acting powerfully and heating the air more rapidly than the fruit, the cooler surface of the latter condensing the moisture in the atmosphere expanded by the sun's warmth, and spotting of the Figs at the eye is not an uncommon consequential occurrence. Take care not to wet the fruit after it commences to ripen, and afford all the light practicable. Tie in and regulate the growths by stopping and thinning, keeping them fairly thin, and not pinching where there is room, as the finest fruits are borne on extensions, especially in the first crop, spurred shoots giving good results in the second crops. Do not allow any lack of water at the roots, yet give less supplies than when the fruit is swelling. If red spider attack the trees the fruit should be closely gathered, and a good syringing given, which will not injure the remaining fruit providing it is done on a fine day, so that the moisture does not remain long on the fruit.

Young Trees in Pots for Next Year's Early Forcing.—The growths of these must not be stopped much after this date, but have all the light practicable, and be kept as near the glass as possible without touching it, so as to secure sturdy, well ripened growth, keeping this clean by syringing and the application of an approved insecticide when necessary. Afford liquid manure to insure stout, well nourished growth. When the growth is completed the plants may be stood outside to induce rest, but the wood must be well ripened previously, and to be of use for early forcing it must be matured early, and never have its assimilated juices extracted by red spider or scale.—GROWER.

Gadding and Gathering.

"HERE AWA', THERE AWA'."

SIR FREDERICK WIGAN, Bart., of Clare Lawn, East Sheen, adopts an excellent system of growing and housing his splendid Orchid collection. This aristocratic genus of exotic plants has attracted Sir Frederick's attention, and he gratifies his inclination liberally. At his beautiful suburban residence, with its park of green grass and Buttercups on one side, and a large, smoothly undulating lawn, here and there adorned with choice and well tended shrubs on the opposite side, here, I say, Sir Frederick has gathered together his Orchids, the delight of himself and his family.

For instance, the Cymbidiums are arranged within a suitable span-roofed glass house, whose interior is not fitted with straight-edged and prosaic wooden or slate stages, but has by skilful hands been constructed with a beautiful grotto, fringed and adorned with the usual suitable foliage plants, while pockets have been ingeniously conceived in which to fix the large specimen Cymbidiums I have mentioned. The gentle spangle of falling water-dribbles add vivaciousness to the still loveliness of the floral forms. Miltonias, as another instance, occupy the whole side of one extensive span-house, and when in flower, massed as they are, what a rich and charming effect they furnish! There is little doubt that the method of staging a unitary mass of any one species or genus

like this tends much more towards a good effect than does a promiscuous method of arrangement. Sir Frederick has an able cultivator in Mr. W. H. Yonng, who brought home the Sherwood cnp from the recent show in the Temple Gardens. The Clare Lawn collection is attractive at the present time, and, in addition to the numerous specimens of Cymbidium Lowianum and Miltonia vexillaria, with its handsome varieties *M. v. chelsoniensis* and *M. v. Empress Victoria Augusta*, *M. Roezli*, and *M. R. alba*, there are on view some grand plants of *Lælia purpurata*. The pretty little orange-yellow *Lælia Cowani* is very sweet, while good pieces of *Lælio-Cattleya G. S. Ball*, *L.-C. Hippolyta langleyensis*, *L.-C. Edgar Wigan*, are other rare and choice members. The latter received a first-class certificate at the Temple Show; it is very handsome, having a fringed lip, as is natural, when *L. Digbyana* was one of the parents, *L.-C. Aphrodite* being the other. *L. purpurata* Arthur Wigan has a larger and handsomer lip than the parent type. *L. Skinneri* and *L. S. alba* were simply crowded with their exquisitely beautiful flowers. These are two splendid Orchids for any collection.

Amongst Cattleyas were Mossias in large numbers, flowering with profusion and bearing handsome blooms. *C. M. Duloe* is a specially fine variety. The Cypripediums and Odontoglossums in houses by themselves were varied, and, like every genus of the order in the Clare Lawn collection, they were in a most creditable condition, viewed from the point of healthfulness and florification. *C. Rothschildianum* is somewhat uncommon, and so are the white Cypripediums, which are so softly beautiful, including *C. niveum*, *C. bellatulum*, *C. b. album*, *C. Godefroyæ leucochilum*, and the yellowish *C. concolor*. The latter pair are special gems. Many other Cypripediums which are better known are included in Sir Frederick Wigan's houses. Plants of the interesting Cymbidium tigrinum were bearing upwards of a dozen racemes each, in small pans. Odontoglossum crispum, in some handsome flushed and spotted varieties, furnished the stages of some cool houses. *O. excellens*, *Andersonianum*, *marmoratum*, and handsome pieces of triumphans were each pictures in themselves. *Oncidium ampliatum majus*, together with *O. cryptocrepis* and *O. c. superbum*, had large, wide spreading inflorescences, quite magnificent, and a great aid to the effectiveness of any group or show of Orchids. Bletias, Thunias, Spathoglottis, and a host of brilliant and some rare Masdevallias, were further subjects whose presence enlivened and beautified the stages of succeeding houses. The collection is altogether one of the finest around London, and I hope to have more to say on another occasion.

The fruit and other houses and garden generally are in up-to-date condition, the crops being at perfection, while every rood of the area is neatly dressed and kept, and admirably designed. Mr. Bain is gardener, and has plenty to occupy his attention in maintaining this lovely suburban garden in its interesting and truly gardenesque condition.

Sutton's of Reading.

Such is the occupation of gardeners, that no sooner have the results of one season's thought and efforts been attained than fresh preparations have at once to be instituted, if succeeding repetitionary results are desired. Almost before the blooms fade upon his Chrysanthemums the grower has inserted the cuttings that are to give flowers during the autumn or winter of a year hence; and so with many other plants, before one season's flowers have gone, new efforts are exerted to provide the harvest that lies away in the months to come. So thought I when inspecting the Aquilegias, Myosotis, Polyanthuses, Wallflowers, and Pansies, a couple of weeks ago, in Messrs. Sutton & Sons' trial grounds at Reading. The plants were still briskly flowering, but already seeds are being ordered, and sowings will almost at once be made to furnish the plants that will beautify the flower beds and borders next spring.

Efforts are being made by the seed growers to provide a varied selection of suitable Myosotis (Forget-me-nots), than which no dwarf, early flowering plant is better adapted for carpeting spring beds. Already the Reading folks have red (or rather pink), white, and blue varieties, and we cannot now say that it is impossible to design a "Union Jack" for an April display out of doors. These colours have evolved from Sutton's "Gem" type, with erect branches, from 8 inches to 1 foot in height, and covered with flowers. A well-grown bed thus presents a handsome and showy effect. The old, early flowering dissitiflora furnishes a capital subject for use in carpeting, while the beds may be filled with bulbs, &c., which flower above the Myosotis. The varieties named respectively Dwarf White (which matches with Silene) and Dwarf Blue are suitable for the same purpose, or for edging; other uses suggest themselves. It seemed incongruous and a trifle cruel (!) to one with tender feelings to view the true Water Forget-me-not (*M. palustris semperflorens*) taking its chances with the other subjects on the dry Reading soil; nevertheless it was flourishing, and appeared quite happy. But for a telling and distinct blue variety let me recommend Royal Blue, which equals the bluest sky, and is besides both free flowering, very early, and long-lasting. M. Sutton's Perfection deserves a greater notice than can be given. This variety is remarkable in that the corolla has ten segments, and would point to development toward doubling. A true double blue Myosotis would meet with a ready demand.

The Pansies are another class of suitable spring and summer bedding plants. What have been named the Striped Bedding Pansies

are undergoing careful selection in the Reading grounds at present; and a showy and very distinctive strain has been evolved. All of those in the strain I refer to are more or less conspicuously striped (after the manner of a flaked Carnation), and the colours have, so far, been confined to chestnut-brown, mahogany, orange, russet, copper, and combinations of these rich and showy shades, quite bizarre in their way. A number of highly superior Pansy varieties have received individual names, but the Perfection mixture, which includes a selection of all the best and choicest sorts, will possibly be most appreciated by growers generally. The Bedding Light Blue, Giant Yellow, Bedding Black, Lord Beaconsfield (rich velvety black with lavender upper petals), Peacock (purplish-violet with bright pink edges), President Carnot, Harlequin (purple on a copper ground, one of the finest of the striped strain), were all of special merit as shown in the trials. Every precaution is exercised to maintain a showy, free - flowering, handsome, and substantial strain of Pansies.

The Wallflowers were all but past, yet one could not but be surprised at the wide selection of colours that now are afforded in this genus. Pure white has yet to be perfected, but an approximation to it is being jealously watched. Pale sulphur yellow to deep and glowing golden, on the one hand, and purple to brilliant crimson and scarlet on the other, are colours that can now be obtained. Double and single varieties in distinct colours are procurable. The "Queen" section—Purple Queen, Faerie Queene, and Eastern Queen, are each charming and very useful sorts, and the Wallflower fulfils an important part in spring bedding. Cloth of Gold is another pre-eminently brilliant variety. Recent years have also brought forward a dwarf, bushy, floriferous strain of Aquilegias with a score of differently coloured flowers. These are hybrids from the old species, themselves unexcelled in point of beauty, but the hybrids from them are meritorious, and more valuable because they succeed better in the drier air and soil of the southern counties than the older types, which are really indigenous to cool, Highland regions.—WANDERING WILLIE.

Lecture on Gardening.—An arrangement has been made in connection with the Yorkshire College and the East and West Riding Joint Agricultural Council, whereby a course of five lectures is to be given by Thomas Ridington, Esq., F.R.H.S. Subject: "Practical Gardening." The first of these took place on Monday evening, June 3rd, in the kitchen garden, Netherfield House, by permission of Mr. Hepworth. The subject taken was on insect pests and fungoid growths, and the best method of destroying them, which was very instructive, and much appreciated by those present. It is to be hoped that all who can will avail themselves of the opportunity of gaining useful and practical knowledge on gardening.

Obituary.

Lord Wantage, V.C., K.C.B.

Sir Robert James Loyd-Lindsay, V.C., K.C.B., first Baron Wantage, died, from diabetes, on Monday, June 10th, at his seat, Lockinge Park, Wantage, aged sixty-nine years. He was a brave and cultured Scottish gentleman of the best type, and a worthy representative of the Lindsay stock. He fought through the Crimea War, and at Inkerman won the Victoria Cross. Since retiring from his military career Lord Wantage has devoted considerable attention to agriculture, farming so many as 10,000 acres in Berkshire. Horticulture also attracted him, and many splendid collections of fruit have been exhibited in London and elsewhere from his gardens. Lord Wantage leaves no heir, and the

peerage becomes extinct. On page 501 we furnish an illustration of part of his lordship's late home, Lockinge Park, showing the beautiful terrace flower garden, the church and conservatory.

Mr. Thos. S. Ware.

We regret to record the death of Mr. Thomas S. Ware, late of Tottenham, at Barnard Castle, on the 30th May, in his 77th year. Mr. Ware was founder of the firm of Messrs. T. S. Ware, Ltd., now of Hale Farm Nurseries, Feltham, London.

Mr. Wm. Faneourt.

Mr. William Faneourt died at the Cook County Hospital, Chicago, May 20th, and was buried in Mt. Greenwood Cemetery on the 24th. His father was a noted propagator at Henderson's nursery, London, in old times when propagating was a fine art, and when the door of the propagating house was kept locked for fear of "cowans" and eavesdroppers. The son was no less noted in the same line (at least, so say those that knew him well), when he could be kept at his post long enough. He was also noted as a Chrysanthemum

grower a few years ago, having been a season each at Lincoln Park, Basset and Washburn's, Vaughan's greenhouses, in the latter capacity. It is hard to say for whom he had not worked in his sojourn of twenty-five years around Chicago. He was born in London, England, about 1830, and went to America in 1866, working first for Mr. Robert Buist, sen., afterwards for Mr. John Dick in Philadelphia.

A Grove of Myrtle Trees.—The custom was observed in the marriage of the Prince of Wales and all other of Queen Victoria's children and grandchildren. There is already, as the result of this charming custom, the making of a grove of Myrtle trees. Other customs attached to marriages of the Royal Family relate to the bouquet and the wedding cake. Ever since the marriage of Queen Victoria a firm of Windsor florists have had the honour of presenting the one, a Chester confectioner the other, neither accepting payment.



TULIPA BRUNHILDE (See note on page 502.)

Societies.

Royal Horticultural—Scientific Committee, June 4th.

Present: Dr. M. T. Masters (in the chair); Messrs. Veitch, Bowles, Douglas, O'Brien, Chapman, Bateson, Worsdell, Bennett, Saunders, Hogg, Gordon, Worsley, Holmes, Drs. Rendle, Cooke, Müller, Rev. W. Wilks, and Rev. G. Henslow, Hon. Sec.; Visitor, Sir G. King, K.C.I.E., F.R.S., V.M.H.

Before commencing the usual business the chairman said he had a very pleasant duty to perform, which was to present the visitor, Sir G. King, with the Victorian Medal of Honour. Sir George King expressed the great pleasure of receiving it, but considered himself as not worthy of that honour, a sentiment unanimously disavowed by all the members present.

Schinus molle with galls.—Mr. Robert Newstead reported as follows upon the specimens sent by Dr. Bonavia from San Remo:—"The insects upon the shoot are a species of adult ♀ Ceroplastes, and I think *C. rusci*, Linn, which is the only known Palaearctic species of the genus. The insect is one of the most beautiful of the coccidæ."

Cherry fruits and caterpillars.—Specimens sent from the Chiswick Gardens showed some 50 per cent. of fruits attacked. The insect being within the calyx, this protects them from insecticides. Mr. Saunders reported as follows upon them:—"The young Cherries from the society's garden at Chiswick were attacked by the caterpillars of a small moth, *Argyresthia ephippella*, one of the *Tineina*. As to the destruction of this insect, where it is possible, cutting off and immediately burning the infested bunches of blossom is a very effective method. I cannot find any account of the life history of this insect, so am uncertain in what condition, or where it passes the winter. If it be either in the egg or chrysalis state attached to the bark of the stem or branches, a good remedy would be spraying with a caustic alkali wash some time after the leaves have fallen, and before the buds show any signs of opening in the spring. If the chrysalides be formed in the ground, a good dressing of lime applied to the surface early in the spring would probably prevent the moths from reaching the open air. Spraying the fruit would not be of any use, as the insecticide would not reach the caterpillar inside."

Raspberry buds attacked by caterpillars.—Mr. A. Gaut of the Yorkshire College, Leeds, sent the following communication:—"Enclosed you will find some Raspberry buds containing caterpillars of the Raspberry stem bud caterpillar (*Lampronia rubiella*, *Bjerk*), which you might think your committee would like to see and notice. In and around Gärforth, about seven miles east of Leeds, upwards of 100 acres of Raspberries are grown for market purposes, and in some years this attack is a very serious one, as was the case last year, 1900. I visited the grounds then during the months of April, May, and June, and noticed the caterpillars, pupæ, and little moths in immense quantities, and in some of the Raspberry grounds the canes had the appearance as if they had been very much injured by frost. This entailed great loss to the growers. On April 20th I took a walk through several of the grounds, and noticed large quantities of the little scarlet caterpillars crawling up the stems, and very many within the buds, and I naturally expected a very serious attack again this year, but fortunately owing to the warm weather we have experienced during the past week the young buds and shoots have made such rapid progress that they have grown away from the attack, and although the caterpillars are still present in immense quantities, the crop will not be so much affected. I notice that it is in cold, late springs we get the worst attacks. Some of the more intelligent growers do not suffer so much, as they take the precaution to mulch the ground with soil containing some insecticide, or dress the ground about the stools with soot or lime during the winter months, and it is curious that those who follow the old practice of digging amongst the canes in winter also escape fairly well. I am doing all I can in the way of advice, but it is difficult to get many to follow it, and where there are so many growers it is impossible to get them all to combat this attack at one and the same time, as should be the case."

Fungus on wood.—Mrs. Floyer sent a specimen of an orange-coloured wool-like mycelium, observing that "it grows on the wooden posts put to protect visitors in the interior of Poole's Cavern, Buxton. It occurs many yards inside, where no light except that of an occasional gas-jet can reach it." Dr. M. C. Cooke reported upon it as follows:—"The substance you send has long been known and noted under the name of *Ozonium aureum*, and classed with fungi; but it is only an incomplete or imperfect stage, analogous to *Rhizomorpha*. It is supposed to represent the mycelium of some one or more of woody *Polypori*, and possibly of *Fomes fomentarius*; this is, however, of small importance. It is an incomplete fungus, and will attack living trees, especially about the roots, and ultimately kill them."

Pelargonium dissociation.—Mr. Wilks exhibited a truss from a plant which normally bears bright red crimson flowers; but it had three blossoms of a pale pink-mauve tint, probably a reversion to an ancestral parent, such as *P. grandiflora*, one of the original sources of the modern composite hybrids of *Fancy Pelargoniums*.

Podisoma on Juniper.—A branch bearing this fungus was received from Mr. W. H. Divers, Belvoir Castle Gardens. It is dimorphic, and produces the other form, known as *Ræstelia lacerata*, on the Hawthorn.

Rose leaf discoloured.—Mr. Saunders showed leaves from a *Marie Van Houtte* Rose growing at Oxford. It was planted in 1899, and did fairly well in 1900. This year all the leaves are variegated, much resembling those of the Japanese Honeysuckle. It was difficult to pronounce as to a cause, but something in the soil was suggested as likely to produce it. He also showed a stem of *Rosa rugosa* with a gall-like growth formed just above the level of the earth. The plant was one in a Rose hedge composed of *R. rugosa* and *Aimee Vibert*. Several of the plants are affected in the same way. It appears to resemble a bacterial disease that attacks Raspberry canes in the United States, known as "root or crown gall." The Rose was grown at Micheldever, Hampshire. Mr. Worsdell undertook to examine it. He also exhibited a Tulip showing a bulbil in the axil of a leaf on the flower stem.

Cephalotaxus Fortunei malformed.—Mr. Worsdell exhibited drawings of proliferous conditions of the female flowers of this tree. These form really an inflorescence of bracts with two ovules, the latter being another shoot. Both the main axis and the floral axis were proliferous. The question arose as to whether this was the result of an impediment to the circulation through strangulation, to which the tree was subjected, or to non-pollination.

Miltoia macropetalum.—Mr. Chapman showed a fine flowering plant, remarkable for having the lateral petals marked like the labellum. It had exhibited this peculiarity for eight years, and plants raised by offsets from it bore the same abnormal flowers.

Tulip, malformed.—Mr. O'Brien exhibited a Parrot Tulip, in which the bracts and outer perianth leaves were partly green and partly yellow, exhibiting a not uncommon struggle between the "vegetative" and "reproductive" energies.

Aroid with flies.—Mr. Bowles exhibited a large-spathed Aroid, the contracted part of the spathe being full of dead flies (*Lucilia Cæsar*). These had previously laid eggs, the grubs of which had lived in the decayed mass. It was somewhat difficult to explain how cross-fertilisation could be secured, or insects born within the spathe could escape.

Crinum hybrid.—Mr. Worsley showed a fine bloom with a rose-coloured perianth of *C. scabrum* × *C. Moorei*.

Tomato leaves proliferous.—Dr. Bonavia sent some examples of this not uncommon peculiarity. It was the variety Orchard's No. 1. Dr. Bonavia regards the leaf as a modified branch, but the anatomical structure of the petiole is not that of a stem, but of the usual kind in petioles, having a horse-shoe like section of the fibro-vascular bundles with two extra cords above on either side of the superior groove. The leaves had been shortened, and the abnormal buds grew out as a consequence from the axils of the leaflets. The inflorescence appears to terminate in a leaf with an axillary bud, but this latter is really the terminal bud being displaced by the vigour of the leaf. Mr. P. Dachartre was the first to describe proliferous Tomatoes. It occurred particularly in the true species, *Lycopersicon cerasiforme*, *Dun*, less so in *L. pyriforme*, *Dun*, and only in the hybrid *L. esculentum* when the leaves had been cut. He says the proliferous state was practically habitual in the yellow variety of the first-named species. The new bud arises from the axil of the leaflet, and a vascular connection is made with the upper end of the "horse-shoe;" the cords are very sinuous at first, but soon form a perfect cylinder, of an oval form in section, which then runs up the stem of the new bud.—(*Note Sur des Feuilles ramifères de Tomates. Ann. des Sci. Nat., Trois sèr., tom 19, p. 241, 1853.*)

Royal National Tulip, June 5th.

THE annual northern exhibition of the Tulip society was held at the Free Library, Middleton, near Manchester, on Wednesday, June 5th. The date selected was altogether too late. The forcing weather of the last six weeks upset all calculations, consequently several prominent exhibitors, such as the Rev. F. D. Horner, Mr. C. W. Needham, and Mr. W. Dymock, had no flowers to bring. Under these circumstances the show was robbed of much of its interest, and most of the principal prizes went to Mr. J. W. Bentley, Stakehill, Castleton, Manchester, who brought a large quantity of good flowers. Mr. G. Eyre, of Ripley, Derbyshire, brought some excellent examples; and Mr. T. Buckley, of Stalybridge, showed well for a novice. There is little that calls for notice in the flowers shown. The old standard varieties were pre-eminent, and novelties were very scarce. The judges, Messrs. Whittaker (Royton) and Housley (Stockport) made the following awards:—

Rectified Tulips.

Class 1: Twelve dissimilar Tulips, two feathered and two flamed in each class.—First, silver cup, Mr. Bentley, with Sir J. Paxton, Dr. Hardy, flamed; Rifleman, Garibaldi, feathered bizarres; George Edward, Talisman, flamed; King of the Universe, Guido, feathered bybs.; Mabel, A. M'Gregor, flamed; Jane, Sarah Ann, feathered roses. Second, Mr. A. Moorhouse, Wakefield, with Sir J. Paxton, Slnphur, flamed; Sir J. Paxton, Lord F. Cavendish, feathered bizarres; May Queen, Talisman, flamed; Bertha, May Queen, feathered bybs.; Mabel, Mrs. Bright, flamed; A. M'Gregor, Modesty, feathered roses. Third, Mr. J. H. Wood, Middleton, with Sir J. Paxton, W. Wilson, flamed; Sir J. Paxton, Dr. Hardy, feathered bizarres; Talisman, Surpass le Grand, flamed; Bessie, King of the Universe, feathered bybs.; A. M'Gregor, Triomphe Royale, flamed; Modesty, Heroine, feathered roses.

Class 2: *Six dissimilar Tulips, one feathered, one flamed in each class.*—First, Mr. Bentley, with Sir J. Paxton, flamed; Lord Lilford, feathered bizarres; Talisman, flamed; Nellie Hughes, feathered bybs.; A. M'Gregor, flamed; Sarah Ann, feathered roses. Second, Mr. Wood, with Sir J. Paxton, flamed and feathered bizarres; Chancellor, flamed; Violet Amiable, feathered bybs.; A. M'Gregor, flamed; Heroine, feathered roses. Third, Mr. Moorhouse, with Sir J. Paxton, flamed; Typo, feathered bizarres; Talisman, flamed and feathered bybs.; A. M'Gregor, flamed and feathered roses. Fourth, Mr. W. Mellor, Wakefield, with Sir J. Paxton, flamed and feathered bizarres; Talisman, flamed; Queen of the May, feathered bybs.; A. M'Gregor, flamed; Rose Hill, feathered roses.

Class 3: *Six dissimilar Tulips, two of each class (small growers only).*—First, Mr. Eyre, with Ajax, flamed; Lord Lilford, feathered bizarres; Talisman, flamed; Beauty of Litchurch, feathered bybs.; Mabel, flamed; A. M'Gregor, feathered roses. Second, Mr. Buckley, with Sir J. Paxton, flamed; John Ratcliffe, feathered bizarres; Princess Royal, flamed; May Queen, feathered bybs.; Rose Hill, flamed; Industry, feathered roses.

Class 4: *Three feathered Tulips.*—First, Mr. Bentley, with Duke of Devonshire, Alice Gray, Jane. Second, Mr. Eyre, with Lord Lilford, May Queen, A. M'Gregor. Third, Mr. Buckley, with Lord Lilford, Coningsby, Andromeda. Fourth, Mr. Moorhouse, with Typo, Mrs. Sharp, Mrs. Atkin. Fifth, Mr. Wood, with Sir J. Paxton, W. Bentley, Industry.

Class 5: *Three flamed Tulips.*—First, Mr. Bentley, with Dr. Hardy, Talisman, Mabel. Second, Mr. Eyre, with Dr. Hardy, Talisman, T. Royale. Third, Mr. Wood, with Sir J. Paxton, Chancellor, T. Royale. Fourth, Mr. Moorhouse, with Sir J. Paxton, May Queen, Mrs. Bright. Fifth, Mr. Mellor, with Sir J. Paxton, Talisman, A. M'Gregor. Sixth, Mr. Buckley, not named.

Class 6: *Pairs of Tulips, one feathered and one flamed (maiden growers only).*—First, Mr. Buckley, with Dr. Hardy and May Queen.

Class 7: *Pairs of Tulips, one feathered and one flamed.*—First, Mr. Eyre, with Sir S. Romilly and Sir J. Paxton. Second, Mr. Bentley, with Dr. Hardy and Bertha. Third, Mr. Buckley, with Dr. Hardy and May Queen. Fourth, Mr. Moorhouse, with Sir J. Paxton, feathered and flamed. Fifth, Mr. Wood, with Sir J. Paxton, feathered and flamed. Sixth, Mr. Mellor, with Sir J. Paxton and Talisman.

Class 8: *Single blooms, feathered bizarres.*—First, second, and fourth to tenth, Mr. Bentley, with Lord F. Cavendish, J. M'Intosh, Albert, Sir J. Paxton, C. H. Hopwood, W. Wilson, Duke of Edinburgh, Seedling, Lord F. Cavendish. Third, Mr. Eyre, with Lord Lilford. *Feathered roses.*—First to tenth, Mr. Bentley, with Sarah Ann, Sarah Ann, Mrs. Thurstan, S. Headley, Modesty, Mrs. Collier, Collier's Seedling, and Alice. *Feathered bybs.*—First to fourth, Mr. Bentley, with Lord Melbourne, Gentle Jackie (seedling), Mrs. Jackson, Bertha. Fifth and tenth, Mr. Buckley, with May Queen. Sixth, seventh, and ninth, Mr. Bentley, with Guido, King of the Universe, W. Parkinson. Eighth, Mr. Eyre, with Adonis. *Flamed bizarres.*—First to tenth, Mr. Bentley, with Sir J. Paxton, Sir S. Romilly, Dr. Hardy, Lord Stanley, Prince of Wales, W. Wilson, S. Barlow, Cyril, Sulphur. *Flamed roses.*—First to ninth, Mr. Bentley, with A. M'Gregor, Madame St. Arnaud, Hepworth's 23/61, Tryphena, Lloyd's 19, A. M'Gregor, Mrs. Wooller, Hepworth's 9/64, Mary Jackson. Tenth, Mr. Wood, with Aglaia. *Flamed bybs.*—First to fifth, Mr. Bentley, with Talisman, Camp's Seedling, Martin's 117, Lord Denman, Adonis. Sixth, Mr. Buckley, with May Queen. Seventh, eighth, tenth, Mr. Bentley, with Prince Arthur, Prince of Morocco, Duchess of Sutherland. Ninth, Mr. Mellor, with Talisman.

Class 9: *Best feathered Tulip.*—Mr. Moorhouse, with Sir J. Paxton. *Best flamed Tulip.*—Mr. Eyre, with Dr. Hardy.

Breeder Tulips.

Class 10: *Six dissimilar, two in each class.*—First, Mr. Bentley, with Goldfinder, Alfred Lloyd, bizarres; Mrs. Barlow, A. M'Gregor, roses; Wm. Parkinson, Beauty of Litchurch, bybs. Second, Mr. Wood, with Sulphur, Wm. Lea, bizarres; Mabel, Rose Hill, roses; Leech's Seedling, Surpass le Grand, bybs. Third, Mr. Moorhouse, with King and Lea's 1, bizarres; A. M'Gregor, Mabel, roses; Janette and Martin's 117, bybs. Fourth, Mr. Mellor, with Sir J. Paxton, Sulphur, bizarres; A. M'Gregor, Mrs. Barlow, roses; Mrs. Gill and May Queen, bybs.

Class 11: *Three breeders, one in each class.*—First, Mr. Bentley, with Sir J. Paxton, Mrs. Barlow, Beauty of Litchurch. Second, Mr. Eyre, with Goldfinder, Madame St. Arnaud, Elizabeth Pegg. Third, Mr. Moorhouse, with Field Marshal, A. M'Gregor, May Queen. Fourth, Mr. Mellor, with Sir J. Paxton, A. M'Gregor, Talisman. Fifth, Mr. Wood, with Sulphur, A. M'Gregor, Boardman's 1.

Class 12: *Single blooms, bizarre breeders.*—First to sixth, Mr. Bentley, with Dr. Hardy, Sir J. Paxton, Goldfinder, Alfred Lloyd, Storer's Seedling, Thurstan's 121. Seventh, Mr. Eyre, with Lea's 1. Eighth, Mr. Bentley, with Richard Yates. *Rose breeders.*—First to sixth, Mr. Bentley, with Madame St. Arnaud, A. M'Gregor, Queen of England, Mabel, Olivia, Hepworth's 9/64. Seventh, Mr. Moorhouse, with Mrs. Barlow. Eighth, Mr. Bentley with Rose Hill. *Byb. breeders.*—First, second, sixth, seventh and eighth, Mr. Bentley, with Alice Grey, Seedling, Leech's Seedling, Martin's 117, Thurstan's 151. Third, fourth and fifth, Mr. Eyre, with Janette and Dreadnought.

Class 13: *Best breeder Tulip.*—Mr. Bentley, with Dr. Hardy.

Butley Tulip Show, May 31st.

THE seventy-sixth annual exhibition was held at the Orange Tree Inn, Butley, near Macclesfield, on Friday, May 31st. From various causes very few growers put in an appearance. The quality of the flowers shown was, however, excellent in all the classes. There were splendid examples of feathered Harry Lowe, Lord F. Cavendish, Geo. Hayward, King of the Universe, Bessie, and Industry; while among flamed flowers Sir J. Paxton, Dr. Hardy, Talisman, Adonis, Mabel, and Madame St. Arnaud were extra good. Breeders were also well shown, Alfred Lloyd, Goldfinder, Mrs. Barlow, Rose Hill, A. M'Gregor, and Alice Grey being the best. The silver cup for the best six rectified flowers, one of each class, was won by Mr. J. W. Bentley with Harry Lowe, feathered; Sir J. Paxton, flamed bizarres; King of the Universe, feathered; Talisman, flamed bybloemens; Mrs. Atkin, feathered; Mabel, flamed roses. The premier feathered flower was King of the Universe, shown by Mr. Bentley, who also got the award for the premier breeder, Mrs. Barlow. Mr. Needham had the premier flamed flower with Sir J. Paxton. Mr. Bentley was first with three breeders with Alfred Lloyd, Rose Hill, and Alice Grey; Mr. Needham second with Dr. Hardy, Mabel, and Bridesmaid; Mr. T. Buckley, Stalybridge, third with Sulphur, Amy, and Agnes. The class awards were as follows:—

Feathered bizarres.—First and second, Mr. Bentley, with Lord F. Cavendish and George Hayward. Third and fourth, Mr. Needham, with Lord Lilford and George Scholes. Fifth and sixth, Mr. Buckley, with W. Wilson and Sir J. Paxton. *Feathered bybs.*—First and second, Mr. Bentley, with Bessie. Third and fourth, Mr. Needham, with E. Pegg and Talisman. Fifth and sixth, Mr. Buckley, with Bessie and Coningsby. *Feathered roses.*—First and second, Mr. Bentley, with Industry and Mrs. Atkin. Third and fourth, Mr. Needham, with Mrs. Atkin and Jane. Fifth and sixth, Mr. Buckley, with Modesty. *Flamed bizarres.*—First, Mr. Needham, with Sir J. Paxton. Second, Mr. Bentley, with Dr. Hardy. Third, Mr. Needham, with Dr. Hardy. Fourth, Mr. Bentley, with Sam. Barlow. Fifth and sixth, Mr. Buckley, with Sir J. Paxton and Dr. Hardy. *Flamed bybs.*—First, Mr. Needham, with Talisman. Second and third, Mr. Bentley, with Duchess of Sutherland and Adonis. Fourth, Mr. Needham, with Adonis. Fifth and sixth, Mr. Buckley, with Talisman and Trip to Stockport. *Flamed roses.*—First and second, Mr. Bentley, with Mabel and Madame St. Arnaud. Third and fourth, Mr. Needham, with Mabel and A. M'Gregor. Fifth and sixth, Mr. Buckley, with Mabel and Lord Hill.

In-breeders: Bizarres.—First and second, Mr. Bentley, with Alfred Lloyd and Goldfinder. Third and fourth, Mr. Needham, with Dr. Hardy. Fifth, Mr. Buckley, with Goldfinder. *Bybs.*—First and second, Mr. Bentley, with Alice Grey and Leach's Seedling. Third and fourth, Mr. Needham, with Bridesmaid and Beauty of Litchurch. Fifth, Mr. Buckley, with Adonis. *Roses.*—First and second, Mr. Bentley, with Mrs. Barlow and A. M'Gregor. Third and fourth, Mr. Needham, with Hepworth's 9/64 and A. M'Gregor. Fifth, Mr. Buckley, with Madame St. Arnaud.

Evesham, June 11th, 12th, and 13th.

TWENTY-EIGHT years have elapsed since the last agricultural exhibition was held at this historic old town by the Worcestershire Agricultural Society (since amalgamated with the Herefordshire Society), and it was resolved to connect, on the present occasion, a horticultural show. The old horticultural society of Evesham fell into desuetude some four or five years ago, excepting the annual Chrysanthemum Show. The picturesque old town on Tuesday last presented a charming appearance with a profusion of flags and banners bedecking its main streets, and an additional effect was created by the procession of the Mayor and Corporation in civic accoutrements marching from the Town Hall to the show ground alongside the beautiful river Avon. The flower show was held in the beautiful public garden on the opposite side of the river, to which visitors were conducted across by means of a large ferry boat from the show yard.

The horticultural show was a comparatively small one, as the exhibits were contained in one large marquee. There was no competition in the open class for a group of miscellaneous plants arranged to produce the best effect, as Messrs. Heath & Sons of Cheltenham were the only exhibitors for the first prize (£10) with an effective, though somewhat formal, arrangement, and in which cork-bark foundations were too much in evidence to allow of what otherwise might have presented, by the wealth of beautiful Orchids, Palms, and other accompaniments, a splendid effect. For six stove and greenhouse Ferns, distinct, Mr. W. Martin, gardener to Miss C. Brnlingham, Landsdown, Evesham, was placed first with very good specimens, and Mr. J. H. Humphrey, gardener to Alfred Espley, Esq., St. Acogwins, Evesham, was awarded the second prize with creditable plants. Begonias were extremely well shown, especially by Mr. Fred Davis, Woolashill, Pershore, his six plants of double flowered tuberous section being well grown and furnished with very fine blooms. The second prize was awarded to Messrs. Heath & Sons for a single flowered lot.

Cut flowers were the chief feature in the show, and prominent in this were the collections of hardy herbaceous flowers. In the class for twenty-four Roses there was but one exhibit, and considering the

earliness of the season was of great excellence, being staged by Messrs. James Townsend & Sons, Worcester, and to whom the first prize (£3) was awarded. The collection contained Catherine Mermet, Mrs. Sharman Crawford, Lady Mary Fitzwilliam, Mrs. John Laing (fine), Rubens, Mrs. W. J. Grant, Madame de Watteville, Gustave Piganeau, La France, Niphetos, Comtesse de Panisse, Helen Keller, Jules Finger, Captain Haywood, Maréchal Niel, Souvenir d'Elise, Bessie Brown, Souvenir d'nn Ami, Countess of Caledon, and Devoniansis.

For a collection of garden or decorative Roses, the first prize of £3 was awarded to Messrs. J. Townsend for large bunches, set up in vases in effective display, whilst the second prize was annexed by Julius Sladden, Esq., Badsey, Evesham, with an interesting assortment, artistically arranged, and in which Lord Penzance's Briers were conspicuously evident. For a collection of herbaceous and other hardy flowers Messrs. Heath & Sons were awarded the first prize for a large and representative assortment, the second going to Messrs. Yates and Sons of Evesham and Cheltenham, and the third falling to Mr. J. H. White, nurseryman, Worcester. For a collection of Begonias, cut blooms, Fred Davis, Esq., Pershore, was placed first, and Messrs. Heath and Sons second, both with attractive displays.

Mr. F. Davis was again to the fore with a group of miscellaneous plants, occupying a space 30 square feet. He had an effective display, consisting, as it did, chiefly of magnificent double-flowering Begonias; the second prize fell to Mr. G. H. Humphrey. For a collection of Carnations in pots, shown without dressing, Messrs. Heath & Sons were awarded the first prize for a highly creditable lot, there being no other exhibit. Sweet Peas were sparsely shown, the first prize being secured by Mr. A. James, gardener to the Rev. G. Coventry, Woolstone Rectory, Cheltenham, with tastefully set up large bunches of comparatively small blooms; the second prize falling to Mr. H. B. Pollard, Evesham, with an elegant arrangement, fair blooms. Mr. T. E. Doeg, Evesham, was placed first in the class for a collection of hardy flowers, to occupy a space 6 feet by 3 feet; the second prize going to Mr. Julius Sladden; and the third to Mr. J. H. Humphrey.

Dinner table decorations formed a very attractive and interesting feature, there being no less than a dozen lady amateur competitors, and decisions of the judges must have been most difficult to arrive at, so great was the artistic ability of the fair contestants evolved. Considerable diversity of opinion, however, was expressed amongst the visitors as to the respective merits of the exhibits, and would have reversed the first and second awards. The first prize was secured by Miss J. M. Theodora Martin, Winwick House, Evesham, with an arrangement of two shades of pink Sweet Peas, set up in low bowls or vases, somewhat crowded with blooms. The second honours fell to Miss M. D. Watson, Lansdown Parade, Cheltenham, for a bright arrangement of pale blue Irises, Ferns, and Asparagus plumosus fronds, but the effect was weakened by using a superabundance of tall glasses, thus giving a crowded appearance. The third prize fell to Miss Gertrude Pitcher, The Grange, Pershore, with a really elegant arrangement of yellow Iceland Poppies and Fern fronds.

Hand bouquets were very well exhibited, and Mrs. James, Woolston, Cheltenham, was accorded first honours with a composition of pale blue Irises, Lily of the Valley, Ferns, and Asparagus; the second prize to Mrs. M. D. Watson, Cheltenham. Buttonholes and lady's sprays were tastefully arranged by Miss M. Doeg, Miss Warner, Hampton, Evesham, and Miss Ethel N. Sladden, Badsey.

Vegetables were excellently exhibited, and for a collection, unlimited, the Rev. G. Coventry was awarded the first prize, having very fine Tomatoes, Peas, Cauliflowers, Artichokes, French Beans, Vegetable Marrows, Cucumbers, Turnips, winter Onions, and Asparagus; the second prize falling to Mr. G. W. Restall with also a capital exhibit. Single dishes of Peas, Tomatoes, Potatoes, and Asparagus (the latter, as might be expected of Evesham, was of prodigious size), were finely shown by several exhibitors. There was also a good competition for Messrs. Yates & Sons' prizes for collections of vegetables.

Fruit was not in evidence, excepting a few dishes of Strawberries, a remarkably fine one being Monarch, beautifully coloured, grown by Mr. W. G. Restall.

Messrs. James Carter & Co. and Messrs. Sutton & Sons offered prizes in a number of the classes.

Notts Horticultural and Botanical.

An attractive schedule has been issued by the Notts Horticultural and Botanical Society, in connection with the annual exhibition, to be held in the Arboretum, Nottingham, on July 24th and 25th. It will be remembered that last year the show was held in conjunction with that of the Notts Agricultural Society at Colwick Park, but it has been decided on this occasion to return to the scene of former exhibitions. The schedule, which is open throughout to all England, contains the particulars of sixty-one classes, entry for which must be made by July 17th, the most important competitions being for a silver cup and prize of £10, offered by Lord Henry Bentinck, M.P., for a group of plants not to exceed 200 superficial feet, and a silver cup and prize of 4 guineas, offered by the Mayor, for a group not to exceed 120 superficial feet. In conjunction with the show a public garden party will be held, and music will be provided on both days by the band of the Royal Horse Guards (Blue) and other bands. Elaborate arrangements have been made for the illumination of the grounds in the evening.

Loughborough and District.

At a meeting on Tuesday evening, the 4th inst., Mr. W. English presiding, Mr. R. Lisle, Beau Manor, read a practical paper upon the cultivation of "Store Foliage and Flowering Plants." The essayist gave full details of the propagation and growth of a large variety of plants for decorative purposes.

Royal Meteorological.

At the ordinary meeting, to be held in the rooms of the society, 70, Victoria Street, Westminster, S.W., on Wednesday, the 19th inst., at 4.30 p.m., the following papers will be read:—1, "The Eclipse Cyclone, the Diurnal Cyclones, and the Cyclones and Anticyclones of Temperate Latitudes," by H. Helm Clayton; 2, "The Seismograph as a Sensitive Barometer," by F. Napier Denison, F.R.Met.Soc. Tea and coffee will be served from 4 to 4.30 p.m.

Wakefield Paxton.

For about an hour and a half on Saturday evening, Mr. W. A. Clark, F.R.H.S., of the York Nurseries, lectured on alpine plants before the members of the Wakefield Paxton Society, at the Woolpacks Hotel. The subject has been studied to some profit by the lecturer, who has just published a book upon it, which is likely to be much sought after. He gave the Paxtonians on Saturday, however, full details as to the history, habits, and culture of some 250 choice plants brought with him for specimen purposes. The chat was a most profitable one, and at the close a hearty vote of thanks was accorded to the lecturer, on the motion of Mr. Cumberbirch (Normanton), seconded by Mr. Garside.

Sharrow and District.

At the monthly meeting of this society a very interesting and instructive essay was given by Mr. Marsden, gardener to Mr. W. G. Blake, Mylnhurst, the subject being "Pruning of Outdoor Fruit Trees." A useful discussion ensued, and a number of questions were answered by the essayist. The exhibit for the meeting was herbaceous Calceolarias, of which some capital specimens were staged. Mr. Marsden also exhibited, not for competition, a fine collection of cut blooms of herbaceous Calceolarias of Messrs. Fisher, Son, & Sibray's strain. The specimen plants were mostly from the same strain, and deserved the eulogy passed upon them. Mr. R. Watson also showed some very nice Gloxinia blooms.

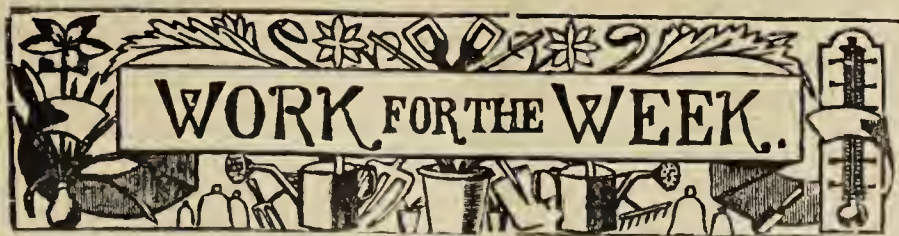
Blackheath Naturalists'.

From a paper read recently before the Blackheath Naturalists' Society by Mr. A. D. Webster, we learn that up to the present no fewer than 175 species of native plants have been catalogued, while of birds seventy-four species have been observed, thirty-four of which breed in Greenwich Park. Among rare visitors is the green woodpecker. The kingfisher is often seen at the pond in the park. Other rare birds met with are the lesser grebe, or dabchick; the moorhen, the teal, the kestrel, and the sparrow-hawk. The common owl is breeding regularly in the park, and jackdaws, wood-pigeons, and ringdoves are also frequently encountered. The crossbill Mr. Webster has seen, as well as the nuthatch. The common wren is plentiful, and the golden-crested wren has also been recognised more than once.

United Horticultural Benefit and Provident.

The monthly committee meeting of this Society was held at the Caledonian Hotel, Robert Street, Adelphi Terrace, Strand, on Monday evening last, Mr. C. H. Curtis in the chair. The minutes of the last meeting were read and confirmed. Eight new members were elected. One member asked to be allowed to pay the higher scale of contribution instead of the lower, which was granted. Messrs. H. M. Pollett & Co.'s estimate for printing 1000 copies of the rules was accepted. The secretary produced the receipt for £55 0s. 8d. paid to the widow of the late Mr. Michael Davis, being the amount standing to his credit in the ledger. A letter of thanks from Mr. H. Saunders was read, for 7s. per week allowed him from the Benevolent Fund, and a receipt for £5 paid to Mr. Saunders from his deposit account was produced. A grant of 10s. from the Convalescent Fund was made to Mr. Joseph Russell (No. 473). Eight members are receiving sick pay. The treasurer reported that he had a balance in hand of £155 5s. 5d.

Darkness and Light in Flower Development. — M. L. Beulaygue has made some interesting experiments upon the influence of darkness on the development of flowers. He finds that flowers open in darkness later than in sunlight, and that the colour of the flowers is in general less intense in darkness than in sunlight, the diminution of intensity being small for some species, while others lose nearly all their colour. Flowers developed in darkness have, in general, a smaller size than those developed in the light; but, on the other hand, the pedicels are sometimes more fully developed. He also found that the weight and the size of flowers developed in darkness, including the pedicels which support them, are less than for flowers developed in sunlight, except in some rare cases where the increase of size of the peduncles counterbalances the diminution of the rest of the plant.



Hardy Fruit Garden.

Wall Trees.—Destroying Insects.—Under certain conditions wall fruit trees are very subject to attacks from insects, some of which specially infest the young shoots, while others, such as red spider, attack the foliage as a whole. Apricots are subject to the leaf-rolling maggot. These are difficult to destroy, except by crushing them or picking off infested leaves. No insecticide is able to reach them. Green, black, and blue aphides attack the young shoots of Apricots, Peaches, Nectarines, Plums, and Cherries. Insect infestation is generally due to preventable causes, one of which is dryness at the root and consequently impoverishment of the food supply. Another cause is the crowding of trees and the encroachment of evergreen and deciduous shrubs and trees upon the space required by the wall trees, which should have unlimited room and a free circulation of air. Blistered leaves appearing on Apricots, Peaches, and Nectarines are due to a want of vigour and checks to the sap by cold winds acting on the leaves. These blistered and crumpled leaves provide a shelter for aphids, which quickly takes possession, misleading some into thinking that the insects are the cause of the evil. Mildew is a dreadful pest on most fruit trees it attacks, and generally infests the younger shoots and leaves, causing much disfiguration. Poverty and dryness of the soil brings it on to a large extent. Indicious management in every particular will largely prevent it. In order to bring the trees into a thoroughly healthy condition, it is highly desirable that the soil about the roots should be well moistened, the growths thinned, regulated, and carefully laid in. Thoroughly syringing with a garden engine, and the application of an insecticide, will cleanse the growths sufficiently. The advertised insecticides are good for the purpose, following the directions supplied. A home made mixture, consisting of softsoap, 3½ lbs. dissolved in 50 gallons of water, with the extract from 5lbs. of quassia chips, and 2 pints of paraffin oil added, is a good remedy. Churn the whole into an emulsion, so that the ingredients may be thoroughly mixed. The solution should be syringed or sprayed on the trees, preferably on a dull day, when the sun cannot harm the foliage. A special remedy for mildew is a mixture of softsoap and sulphur, or half ounce of sulphide of potassium dissolved in a gallon of hot water, cooling the mixture, and then spraying it on the affected parts.

Fruit Bushes.—Caterpillars and Aphids.—The Gooseberry caterpillar sometimes becomes prevalent on bushes, and is capable of doing much harm if not quickly destroyed. Dusting with lime is a good and safe remedy. Hellebore powder kills every caterpillar it touches, but it is poisonous, and not suitable for general use. On Red and White Currants aphides congregate at the points of shoots. These may, however, be destroyed by the process of summer pruning, shortening them back to three pairs of leaves.

Thinning Fruit.—Apricots, Peaches, and Nectarines.—When the shoots have been regulated and laid in, the fruit should be reduced to the number sufficient for the trees to carry, according to their vigour as a whole and that of the branches. Remove duplicate fruits, unfertilised, and all ill-placed specimens.

Cherries.—Retain only the fruits on wall trees, which include dessert and Morello Cherries, that have developed to a good size, removing small fruits for the benefit of the others.

Plums.—A vigorous syringing will effect some thinning by causing the small and unfertilised fruits to fall. The best developed will remain, and continue to swell.

Apples and Pears.—The more freely thinning is practised the finer the fruits which result, but it is only the choice varieties on special trees which should be so reduced. A fair reduction will suffice for the majority, leaving as a rule two fruits on a spur.

Strawberries.—Thinning out the small and ill-formed fruit should be practised with a few choice varieties for special purposes, and to secure the finest possible fruits. Going over large breadths for the purpose of removing undesirable fruits is not practicable. Heavy crops, however, should not be allowed on comparatively weakly plants, which ought to be encouraged to make bold and sturdy growth rather than develop fruit. Late Strawberries may be examined, and only the best and strongest flower trusses allowed to remain.

Watering and Mulching Strawberries.—Where practicable in dry soils and situations watering will be of much benefit to quarters where fruit is swelling. Liquid manure may be given freely before ripening commences. Where a mulch has not been given to keep the fruit clean, a layer of clean, long, or chopped straw should be placed under the trusses of fruit. Failing this, pieces of glass or slate will serve. Anything of an objectionable nature, such as short grass, should be avoided, as it sticks to the fruit in wet weather, and forms a pasty mass to tread upon.

Netting Strawberries.—Small mesh fish netting should be supported over the plants to prevent birds attacking the fruit, which they will do as soon as the first specimens commence to ripen.

Fruit Forcing.

Peaches and Nectarines.—Earliest House.—When all the fruit is gathered from individual trees, the wood on which it has been produced should be cut away to the shoot at its base, which is to afford the bearing wood for next season, except if the fruit has been produced on wood that is necessary to retain for the extension of the trees. All growths not absolutely necessary for bearing next season, or for the extension of the trees, must be cut away, as it is important the foliage be fully exposed to light and air, and it is also essential that it die naturally, not prematurely through attacks of red spider or lack of moisture at the roots. Employ the syringe or engine freely, and have recourse to an insecticide if necessary to keep insect pests in check. Keep the inside borders properly moist by duly watering, not neglecting the outside ones if the weather be dry, supplying liquid manure to weakly trees induced by heavy cropping. Admit all the air possible; and when the buds are plump and the wood firm, the roof-lights, where movable, as they should be in all early forced houses, may be taken off.

Trees Ripening their Fruit.—Ventilate freely, admitting a little air constantly, and to insure the preservation of the foliage in health sprinkle the paths and borders with water in the morning and afternoon, not allowing the soil to become dry, but giving water as required. A light mulching of short spent material is very useful in preventing the surface cracking, lessening evaporation, insuring uniform moisture, and preventing the roots going down in quest of liquid nourishment. Syringing must cease directly the fruit commences to soften for ripening, or the moisture will cause the skin to crack, mould following, and imparting an unpleasant musty flavour, as well as spoiling its appearance. In gathering the fruit great care is necessary, as slight pressure is sufficient to spoil the appearance of the specimen. A piece of wadding should be held in the hand and the fruit removed by gentle pressure, then laid carefully in a padded shallow basket. The fruit intended for packing should be gathered before it is dead ripe. Morning is the best time to gather the fruit, and it should be placed in a cool room to mature before being sent to table. In bright weather the trees should be looked over in the evening as well as morning for the removal of ripe fruit. Some netting suspended beneath the trees is useful to prevent falling fruits being bruised, but let the netting be "pocketed," so as to prevent the fruit dashing against each other.

Trees with Fruit Taking the Last Swelling.—Give every attention to watering, feeding, and mulching. Any extra nourishment will not do any harm provided it is of a substantial nature, such as superphosphate and muriate of potash, with a moderate amount of nitrate of soda. About 5 parts of superphosphate, 3 parts muriate of potash, and 2 parts nitrate of soda form a suitable mixture. The borders, both inside and outside, should be brought into a proper state of moisture by watering, then supply 2 to 4 ozs. of the mixture per square yard, and wash in moderately. Allow the shoots to extend, not pinching the laterals too closely, but they must be prevented shading the fruit, which ought to be raised with its apex to the fullest light. This can be effected by placing thin laths across the trellis, and securing them to the wires. Continue forcible syringings morning and afternoon until the fruit begins ripening, then cease; but do not allow the border and other surfaces to become parchingly dry, as moderate moisture, provided the ventilation is liberal, will not injure the fruit, and it is absolutely necessary for the benefit of the foliage.

Trees Stoning their Fruit.—The trees started in February, or even in March, have fruit of good size and the stoning process in various stages of advancement. To continue this in steady progress and insure its stoning satisfactorily, there must be no deficiency of moisture at the roots, the foliage must be kept clean by daily syringings, and, if necessary, by the prompt application of an insecticide. Continue the temperature at 60° to 65° artificially, and a free circulation of air allowed between 70° and 75°, having it full when the latter is reached, and close at 75°, with plenty of atmospheric moisture. If the temperature advance to 80° or 85°, or even 90°, it will not do any harm, but admit a little air in the evening, so as to allow the pent-up moisture to escape and the temperature to gradually cool through the night. Increase the ventilation with the advancing heat from 65°, not pinching for air in the early part of the day.

Late Houses.—The fruit should be thinned to the quantity required for the crop, or a few more may be left than will be suitable, to allow for casualties in stoning. It is very important not to overburden the trees with more fruit in the early stages of growth than can remain for the crop, and a moderate crop of large, highly coloured fruit is always better than a heavy crop of small fruit, therefore thin well, leaving a few more than will be required ultimately. If it is desired to retard the fruit in any late houses, so as to prolong the season of supply, it is best effected by freer ventilation during the day, and continuing it at night when mild; indeed, there is only need to ventilate day and night to keep back the crop, so as to ripen about the same time, as that usually occurs with trees against walls, and by judicious ventilation the fruit may be had over a more lengthened period. Syringe morning and evening in fine weather, but avoid syringing on dull days and on mornings when moisture has been condensed through the night and hangs on the margins of the leaves of vigorous trees in the early morning. Admit air early and freely. Mulch inside and outside borders lightly with short manure, and supply water abundantly. Shoots not required for next year's crop, and those not needed for furnishing the

trees, should be removed. Cut away gross shoots, and keep laterals closely pinched. The shoots on young trees should be left about 15 inches distance apart for next year's bearing, and if they are disposed to elongate above 18 inches they may be pinched to 12 or 15 inches, stopping the laterals at the first leaf, but extensions or main shoots should be allowed to grow their full length, provided they are evenly balanced and there is room. Avoid laying in the growths too thickly; the branches should be 9 to 12 inches apart, and these should be as evenly balanced as possible.



- All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Fungus on Roses (J. R. S.).—We think your Roses are affected with the Orange fungus. Spray or sponge the leaves with 2 ozs. of blue vitriol (sulphate of copper) dissolved in hot water and added to 2 or 3 gallons of cold water.

Book on Geometry (H. Y.).—The list of books on page 423 are not for sale; they represent those included in the young gardeners' library at Syon House. A good book on geometry to suit your needs would be "Bradley's Practical Geometry," &c., second-hand, 2s., with postage extra, from Messrs. Wesley & Son, booksellers, Essex Street, Strand, W.C., or "A Treatise on Plane and Co-ordinate Geometry," price 7s. 6d., from MacMillan & Co., Ltd., London. We could obtain the latter for you at a reduction of 3d. in the 1s.

Tomato Plants Diseased (F. N.).—The plants are attacked by the Sclerotium disease fungus, *Sclerotinia sclerotiorum*, which probably attacks and kills more plants of different species, and belonging to widely separated orders, than any other parasitic fungus. The living part of the stem, especially of Tomato plants, push roots from the unattacked portion, and these—supposing the diseased part be cut away and the plants potted or planted—continue the growth even to the production of a fair crop of Tomatoes. The diseased and fallen stems—that is, the dead, dry, and brittle parts, contain a considerable number of black sclerotia of variable size and shape, usually in the pith, though also beneath the cortex or bark, which are surrounded by mycelium. The decay of the stems liberates the sclerotia, and they lie on or in the ground until the following spring, when they give origin to, in most cases, several more or less funnel-shaped ascophores. The spores are ejected from the asci at maturity, and germinate at once. The fungus is one of the most difficult to combat. Diseased stems, however, should be collected and burned. It would be advisable to give a dressing of gas lime fresh from gasworks, $\frac{1}{2}$ cwt. per rod, 4 tons per acre, in autumn, spreading evenly, and leaving on the surface a month or six weeks before digging or ploughing the ground. Dressings of quicklime and soot have been advised, and, as proved by your using them, with indifferent success. The use of quicklime in the spring has been attended by good results in Potatoes, which are liable to the sclerotium disease, avoiding application of fresh stable or farmyard manure, as this greatly favours the spread of the disease. As regards soil for raising the plants, we have found almost absolute freedom from this disease when the compost has been treated a year in advance with quicklime and soot, which probably destroyed the mycelium during its period of saprophytic existence. Reliance should be placed on a dressing of rape dust, bonemeal, and kainit where the ground is light, as it should be, for outdoor Tomatoes, not using any stable or farmyard manure unless passed for a considerable time in the rot heap. Better still, apply the manure in autumn, if any, and dress with quicklime in the spring. As regards your other question, respecting presence of other fungi, we regret to say there is evidence of leaf curl or black stripe fungus (*Macrosporium Solani*, or, according to some, *M. tomatum*). This disease probably goes over with the seed, though itself is a wound parasite. It forms a dark coloured mycelium in the tissues, rapidly destroying them, consequently the affected area sinks a little below the general surface of the healthy part of the stem or fruit, hence the terms black stripe or black rot. Thorough spraying with potassium sulphide solution at frequent intervals has been advised as a preventive, but the chief points are avoid seed from diseased plants, and not use fresh manure, as this induces cracking of the stems and fruit, consequently greatly favours the fungus.

Plums Unhealthy (F. T.).—We do not find any pest upon the leaves you sent to us. The discolouration of the foliage is probably caused by the drought and lack of nourishment.

Transplanting Vines (R. L.).—Care will require to be exercised in removing the Vines, and the roots must be kept moist during transit, when the Vines may be safely removed after the leaves have fallen in November. Nitric or muriatic acid applied to the putty with a brush will, it is said, in an hour render the putty soft enough to be removed.

Cucumbers not Swelling (S. J.).—The evil would seem to arise from too low a temperature and moist atmosphere. Maintain a night temperature of 65° with slight ventilation, say quarter of an inch of top air, allowing an increase during the day to 75° with fire heat, and 85° with sun heat. Permit the atmosphere to be sufficiently dry to insure the proper dispersion of pollen.

Orchids for Importation (A. G.).—From Manilla we receive several species of *Phalaenopsis*, the best being *P. Schilleriana* (figured in last week's issue), and *P. amabilis*. They will not travel safely unless they are established on native wood before being sent. *Cypripedium laevigatum* is also found there, and is a choice plant. From Rangoon may be sent *Vanda coerulea* and many species of *Dendrobium*, including *D. thyrsiflorum*, *D. Bensoniae*, *D. Wardianum*, *D. crassinode*, &c. *Aërides Schilleriana* is a rare species found in Burmah. Messrs. Veitch's "Manual of Orchidaceous Plants" would be exceedingly useful to you.

Gooseberry Moth (F. L. S.).—Your bushes are infested with the too common Gooseberry or Currant moth (of which we give a figure of its caterpillar), named in Latin *Abraxis grossulariata*. It is by no means exclusively a garden insect, but may frequently be found feeding on the wild plants of woods and lanes. The moth is sluggish in flight, and may sometimes be seen flapping about the garden during the day, resting occasionally on walls. Each moth killed means the destruction of a hundred eggs or more, so you can busy yourself in the pursuit of killing the insect. The caterpillars feed during summer, and prepare for repose about the commencement of winter, frequently drawing together a leaf or two with silk, so as to form a sort of tent; others rest on the Gooseberry twigs, without any covering, all winter. Frost, even though severe, does not always injure them; they revive. During May they wake up and change to the chrysalis, or third stage of their life history, early in the present month. Syringing with a solution of soap and water, or any reliable insecticide, is one way of overcoming or hindering the progress of the caterpillars. By gently tapping the bushes many will fall to the ground, whence they can be gathered up.



GOOSEBERRY
CATERPILLAR.

Proper Season for Cutting Down Evergreen Oak (E. O. M. F.).—The usual time for felling Oaks is in the spring or early summer, when the sap is up and the operation of peeling the trunk and larger branches can readily be performed. The bark is very astringent, and is employed in those countries where the tree is indigenous for tanning hides, and no doubt would answer the same purpose in this country, only that of a single tree would be difficult to dispose of and hardly worth the trouble. The wood is very hard, compact, heavy, and durable, and is used for making pulleys, axles, screws, millwork, and other such appliances which are subjected to much friction. Unless the tree is of considerable dimensions in trunk, we question your obtaining a sale for it; but it would be advisable to consult a timber merchant in your locality. We are obliged by your informing us as to who supplies Cranberry plants, we being aware that the principal nurserymen supply them. The address of the Secretary of the Selborne Society is 20, Hanover Square, London.

Flowers of Melons not Opening (J. D.).—It is a very tantalising, though not an uncommon occurrence, the non-expansion of the flowers being persistent, alike on the first laterals, and also on the sub-laterals. In such another case we were asked advice, and recommended a top-dress of superphosphate of lime. The applicant (late Major Clarke, Welton Place, Daventry) made his own superphosphate by placing bones in a cask in layers with wood ashes, and 4 ozs. of the dry crumbling article was applied per square yard; and the Major wrote us:—"You were right, the Melons wanted phosphate, for soon after the dressing the flowers opened satisfactorily, set the fruit freely, and I have had a very good crop of fine Melons." Probably the rough loam and leaf mould with a little lime rubble has been too generous in the supply of nitrogenic matter, which has a tendency to promote growth at the expense of fertility, favouring shoot and leaf growth rather than the production of fruit—indeed, it conduces in cases of excess, in proportion to the other elements of nutrition, to absolute sterility. Had a top-dressing of superphosphate of lime five parts, and double sulphate of potash and magnesia two parts, mixed, and 3 to 4 ozs. of the mixture been applied, it is likely the flowers would have expanded, the fruit set well, and a good crop have resulted. It often, however, makes just all the difference in the staple of the soil; when firm the set is a good one, and when loose the growth is very free, but the fruit sets very indifferently, or not at all.

Depth of Planting Asparagus (*S. F. O. B.*).—We are much gratified by the practical man seeing your Asparagus beds expressing himself in their favour, he not having seen finer plants for their age. We do not, however, agree with what he suggests, that of planting them deeper, as that would ruin the plants at the very time when they are coming into profit. With the crowns 4 or 5 inches beneath the surface the depth is quite deep enough, if anything too deep, to secure the safety of the buds in a wet winter, and as for the heads being too short, how easy to place on the beds the needful amount of earth from the alleys to secure the required length of blanched stem, if you go in for that form of production. Or you may use the old Mushroom bed manure, it not being advisable to keep the crowns always covered so deeply as 6 to 8 inches, only doing so for the purpose of blanching, removing it as soon as cutting ceased for the season, not leaving more than 4 or 5 inches depth over the crowns.

Spot on Grapes and Syringing Vines (*J. D.*).—Spot is very different to "rust," though some cultivators are persuaded that it is a chill which produces both, the atmosphere being allowed to acquire a high temperature, with the concomitant moisture, and then air is suddenly and in large amount admitted. No doubt mistakes in cultivation are responsible for many ills, and it is well to avoid them as much as possible. When Grapes are only slightly rusted it, as you say, disappears, or very nearly so, when they turn black, which is simply a sequence of the relatively greater area occupied by the rust in the latest than in the earliest stages, for the rust never entirely departs from the skin of the berries once it becomes determined there. It may be caused by water getting there when this is of a decidedly irony nature, but it usually arises from neglecting to attend to the ventilation by time the sun acts powerfully on the house and has raised the temperature considerably, when air being admitted too freely the evaporation is so excessive as to produce a chill injuriously affecting the skin of the berries, and rust is the consequence. In syringing Vines, one of the largest growers for market practises it with a hose pipe, the operator holding the nozzle close to the Vine leaves, and spreading the water by means of the finger, thus forcibly ejecting the red spider, and only from the leaves affected up to the Grapes changing colour for ripening. By this means the Vines are kept free from the pest and the Grapes are not prejudiced, as the main of the water reaches the under side of the leaves and very little on the bunches of Grapes. We have also practised syringing Vines up to the Grapes changing colour, using clear rain water, but even then there is danger of leaving a deposit on the Grapes, which greatly militates against their appearance.

Names of Plants (*S. P.*).—No trouble; we are here for the purpose of affording assistance; send as many others as you have a mind to. 1, *Saxifraga hirta*; 2, *Saxifraga aizoon notata*; 3, *Saxifraga rotundifolia*; 4, omitted in your numbering; 5, *Saxifraga geranioides*; 6, *Saxifraga trifurcata*; 7, *Ajuga reptans*. (*W. Morris*).—1, *Tradescantia virginica*; 2, *Agaricus cepastipes* (Gow), poisonous; 3, *Physalis Alkekengi*, the Winter Cherry. (*Bog*).—*Menyanthes trifoliata*, the Bog Bean. (*F. P. B. O.*).—*Hæmanthus coccineus*, belongs to *Amaryllidæ*. (*J. A.*).—1, *Dendrobium moschatum*; 2, *Veronica gentianoides*; 3, *Corydalis lutea*; 4, *Heuchera glabra*; 5, *Geranium pratense*; note that "Geraniums" and *Pelargoniums* are distinct; 6, *Iris siberica atropurpurea*. (*R. F.*).—1, *Juniperus Sabina*, the Savin; 2, *Abies pungens glauca*; 3, *Rubus odoratus*; 4, *Cistus laurifolius*; 5, *Genista virgata*. (*Arthur Woburn*).—1, *Epidendrum radicans*; 2, *Cypripedium Curtisii*; 3, *Drosera rotundifolia*.

Next Week's Events.

Friday, June 14th.—Royal Botanic Society, Regent's Park, lecture on "Plant Cultivation in British Colonies."

Tuesday, June 18th.—R.H.S. Committees; Croydon and District Horticultural Mutual Improvement Society meet, lecture on "Vegetables for Exhibition."

Wednesday, June 19th.—Oxfordshire Horticultural Exhibition.

Thursday, June 20th.—Linnean Society meeting; Royal Botanical Society meeting.

Phenological Observations.

JUNE 14TH TO 20TH.		PLANTS DEDICATED TO EACH DAY.
14 Fri.	Young swallows fledged.	Sweet Basil.
15 Sat.	Young redstarts fledged.	Sensitive Plant.
16 Sun.	Ivy casting its leaves.	Moss Rose.
17 Mon.	Hawthorn loaded with blossom (1900) at St. Arvans.	Horn Poppy.
18 Tu.	First hay cut (1900) at Bridgend.	Sweet Rocket.
19 Wed.	Tadpoles' fore-feet seen.	Monkey Flower.
20 Thr.	Meadow brown butterfly seen.	Doubtful Poppy.

Covent Garden Market.—June 12th.

Average Wholesale Prices.—Fruit.

	s. d.	s. d.		s. d.	s. d.	
Apples, Tasmanian, case	12	0 to 15	0	Melons, each	1 6 to 2 6	
Figs, green, doz.	4	0	10	0	Oranges, case	15 0 35 0
Grapes, Hamburgh, lb. ...	1	6	2 6	Pears, case	15 0 25 0	
„ Muscat	3	0	4	0	Pines, St. Michael's, each	2 6 4 6
Lemons, Messinas, case	9	0	12	0	Strawberries, lb.	2 0 3 0

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz.	2	0 to 3	0	Leks, bunch	0 1 to 0 2
" Jerusalem, sieve	1	6	0 0	Lettuce, doz.	0 6 1 0
Asparagus, English, 100	1	6	2 0	Mushrooms, forced, lb.	0 8 0 9
" Giant, bundle	15	0	20 0	Mustard and Cress, pnnt.	0 2 0 0
Batavia, doz.	2	0	0 0	Onions, Dutch, bag	5 0 0 0
Beans, French, lb.	0	9	10	" English, cwt.	5 0 0 0
Beet, red, doz.	0	6	0 0	Parsley, doz. bnchs.	2 0 3 0
Broccoli, bush.	0	0	1 0	Potatoes, cwt.	3 0 7 0
Cabbages, tally	1	6	3 0	" New Jersey, cwt	12 0 16 0
Carrots, doz. bnch.	2	0	3 0	Radishes, doz.	0 6 0 9
Cauliflowers, doz.	1	0	2 0	Rhubarb, doz.	1 0 1 3
Chicory, Belgian, lb.	0	4	0 0	Savoy, tally	4 0 5 0
Corn Salad, strike	1	0	1 3	Shallots, lb.	0 4 0 0
Cucumbers, doz.	2	6	4 0	Spinach, bush.	4 0 5 0
Endive, doz.	1	3	2 0	Tomatoes, English, lb.	0 8 0 9
Greens, bush.	1	0	1 6	Turnips, doz., new	4 0 8 0
Herbs, bunch	0	2	0 0	Watercress, doz.	0 6 0 8
Horseradish, bnch.	1	2	1 6		

Average Wholesale Prices.—Plants in Pots

	s. d.	s. d.		s. d.	s. d.
Acacias, var., doz.	12	0 to 13	0	Foliage plants, var., each	1 0 to 5 0
Acers, doz.	12	0	24 0	Fuchsias	5 0 6 0
Aralias, doz.	5	0	12 0	Geraniums, scarlet, doz.	4 0 5 0
Araucaria, doz.	21	0	30 0	" pink, doz.	4 0 6 0
Aspidistra, doz.	18	0	36 0	" King of Denmark, doz.	5 0 6 0
Boronias, doz.	20	0	24 0	Hydrangeas, white, pink	9 0 12 0
Crotons, doz.	18	0	30 0	Lycopodiums, doz.	3 0 4 0
Dracæna, var., doz.	12	0	30 0	Marguerite Daisy, doz.	6 0 12 0
Dracæna, viridis, doz.	9	0	18 0	Mignonette, doz.	6 0 8 0
Erica, various, doz.	8	0	18 0	Myrtles, doz.	6 0 9 0
Euonymus, var., doz.	6	0	13 0	Palms, in var., doz.	15 0 30 0
Evergreens, var., doz.	4	0	18 0	" specimens	21 0 63 0
Ferns, var., doz.	4	0	18 0	Pelargoniums	10 0 12 0
Ferns, small, 100	10	0	16 0	" Ivy leaf	6 0 8 0
Ficus elastica, doz.	9	0	12 0		

Average Wholesale Prices.—Cut Flowers

	s. d.	s. d.		s. d.	s. d.
Arums, doz.	2	6 to 3	0	Maidenhair Fern, dozen	
Asparagus, Fern, bunch	1	6	2 6	bnchs.	4 0 to 6 0
Carnations, 12 blooms	1	0	1 6	Marguerites, white, doz.	
Cattleyas, doz.	6	0	9 0	bnchs.	3 0 4 0
Cornflower, doz. bnchs.	1	0	1 6	" yellow, doz. bnchs.	2 0 3 0
Eucharis, doz.	2	0	0 0	Narcissus, dbl. white, doz.	1 6 2 6
Freesia, doz. bnchs.	0	0	0 0	Odontoglossums	2 0 3 0
Gardenias, doz.	1	6	2 0	Roses, Niphetos, white,	
Geranium, scarlet, doz.				doz.	1 0 2 0
bnchs.	4	0	0 0	" yellow, doz. (Perles)	1 6 2 0
Gladioli, doz. bnchs.	6	0	9 0	" red, doz.	1 0 1 6
Iris, Spanish, doz. bnchs.	6	0	8 0	Smilax, bunch	3 0 4 0
Lilium lancifolium album	2	0	3 0	Spiræa, doz. bnchs.	4 0 6 0
" rubrum	3	0	5 0	Stock, white, doz. bnchs.	2 0 2 6
" longiflorum	2	0	3 0	Sweet Peas, white, doz.	
Lilac, white, bunch	3	0	0 0	bnchs.	4 0 6 0
Lily of the Valley, 12 bnchs.	8	0	12 0	" coloured, doz. bnchs.	4 0 6 0
Mignonette, English, doz.	4	0	6 0		

The Preservation of Fruit.—The Technical Education Committee of the Kent County Council have just issued the results of further investigations by the Principal of the South-Eastern Agricultural College, Wye, Kent (County Councils of Kent and Surrey), on the subject of fruit preservation. In the course of his report Professor Hall states that, while the bottling of fruit on a small scale "is easily done, and might well be part of the routine of every household, I am of opinion that it cannot be taken up by the fruit grower on a large scale, least of all as an occasional means of coping with a year of glut. The plant required and the staff of workers would be expensive, unless they can be employed during more than the brief fruit season. In fine, fruit bottling must be regarded as much the same kind of industry as jam-making, and there is plenty of experience in Kent that the fruit-grower should not attempt jam-making as an adjunct to his own business." On the subject of fruit drying, referring to an experiment with the "Mayfarth" Evaporator, which was carried out by the Royal Horticultural Society in their Chiswick garden during the fruit season of 1891, he writes: "The experiments were chiefly concerned with Apples and Plums, the only fruits grown on a large scale in this country that are suitable for drying. As regards Apples, no difficulty was found in turning out a satisfactory product, particularly with certain kinds of Apples. The finished articles did not, however, pay for the labour and fuel required. As regards Plums, there seems to be plenty of evidence from the Royal Horticultural Society's experiments that the ordinary English market Plum does not dry satisfactorily, being too thin-skinned and juicy."



The Bath and West.

WE may say the season of agricultural shows has fairly opened. There are several big and important fixtures which run the Royal very close, and we should give the place of honour to the Bath and West and Southern Counties. The West of England appears capable of a very liberal interpretation. We have seen the show at St. Albans and Cardiff, and this year at Croydon. Where does the West begin or end? [The Society, which originated at Bath, now embraces the West and Southern counties.—ED.] It strikes us forcibly that if the Royal is to be a permanency, the Bath, if it continues to be peripatetic, will distinctly score. There is no doubt in our mind that the show should come to the people, and we think that by moving about as it does it taps fresh sources, awakens fresh enterprise, and in other words keeps the ball a-rolling. We should fancy Croydon a capital locality for a show—good train service, thickly populated neighbourhood, and the site itself was everything that could be wished. A popular holiday falling during the exhibition must have brought grist to the mill. So often a holiday comes and finds us without a definite plan as to its disposal, we gladly welcome rational amusement at a reasonable figure. When the show is really in the West the butter-making competitions are always strong; cheese and cider, too, are special features. All round in the live stock exhibits there is an increase, and cattle of all classes mustered strong. Oh, dear! we ought to have mentioned the horses first, but just now milk and butter seem to be occupying our best attention. This is the first time we have seen classes for army remounts. Evidently there is a feeling that in our next big war we should have plenty of gees at hand, without having to scour the civilised world for them. We are not surprised at the numerous entries of Jerseys, round and about London they are always to be found. The Sussex breed, too, were at home, as it were, and showed up well. The sheep were all of the south-west country class; early maturity and shapely joints. Poultry, useful rather than fancy, and a class for fowls to be killed and dressed on the ground, a good, practical lesson; forty pens of chickens to be killed seems to us a big entry. The pretty dairy, with its thatched roof and artistic decorations, is always a place of interest to visitors, and the deft dairymaids in their neat costumes. There is a distinct improvement all round in the butter making. If, as Mr. Hanbury hints, there is soon to be a butter standard, as well as one for milk, our dairymaids must be on the alert. We rather fear even yet there are more foolish than wise in their ranks, the foolish ones who will not learn the best methods, and are so content to work by rule of thumb. As in other things, we place our hopes on the rising generation. The young tree is easily bent, and if bad habits are not formed we can but hope that our coming dairymaids will all be classed with the wise.

There are certain men who may be called pioneers. They stand out from the ruck, they are rather extraordinary than ordinary agriculturists. Such a one was Colonel Victor Milward. We regret to say was, but a morning paper tells of his sudden death. He held a brief for the Beetroot, and we believe the pamphlet that he had just issued on the sugar Beetroot cultivation was almost his last work. He was sanguine enough to believe (and his belief is founded on a series of careful experiments) that the Beet in this country is nearly, if not quite, equal to that grown by the Germans, the percentage of sugar has so greatly increased. Whether we want a stimulus in the shape of another ½d. on imported sugar remains still to be seen. Sugar we must and will have, and it may be an increased tax will be but a blessing in disguise, and make us turn our attention to something a little more profitable than corn growing. Here we are in June with flour down 1d. per stone, just the time of year, if ever, that Wheat should get a bit dearer. These are things that no man can understand.

Some time ago we tried to give some idea of the capital system of agricultural teaching carried out in the schools and colleges of the Dominion of Canada. So much is done for the rural child that has been neglected here, the Nature studies as being particularly useful, and calculated to help to keep the working boy in love with the country and its pursuits. Here and there are to be found a few schoolmasters ahead of the times, who try (often under great discouragement) to foster in their children some love for Nature and some understanding

of her methods; but it is only this week that we see any move has been made to train the teachers themselves. The Harper Adams Agricultural College, Newport, Salop, has arranged for a course of "Nature Study" for teachers in the villages. A fortnight of the summer holidays is to be devoted to lectures and demonstrations, given by members of the College staff. We quote from the "Agricultural Gazette" of May 27th, "The work will be done partly in college and partly out of doors, in the gardens, farmyard, and fields. It is not intended to teach agriculture as such, but to give teachers a course of lessons upon those subjects of everyday life which will be suitable for the children of an elementary school." We only hope in time there will be more to follow. Better late than never; if something had been done years ago it might have hindered this undue migration to the towns. Once they have been to the towns, the lads and young men are very ill fitted for taking up again with farm work. The course will be from July 25th to August 8th. Particulars relating to fees and so forth may be obtained from Principal P. Hedworth Foulkes at the College.

Work on the Home Farm.

We have had a very light rain during the week; its effect was very fleeting, and matters are going very badly with spring corn. Barley and Oats are not sufficiently well rooted this season to stand drought, and a continuation of it will soon spell disaster. The crops have made very little growth during the last fortnight, and there has been ample opportunity to chop out all the Thistles. These latter are not quite so plentiful as usual, or, as farmers say, "it is not a Thistle year." Why is it not? Has not the plough something to do with it?

Potatoes have come up quickly and well, and both horse and hand hoes are busy amongst them. Yesterday we noticed several ploughs occupied in moulding up the Potatoes in a large field. The occupier knows what he is doing, and in a day or two horse hoes will partially level the furrows ready for the final hilling. This horse labour, though costly, saves much hand labour, which cannot be had at any price. Up-to-Dates are still the mainstay of most growers, and they have come up very regularly; but they are rather eclipsed this year by a new German variety named Professor Maerker, which looks magnificent. British Lions also look well, as they should do; but we fear their popularity will not be lasting. The top-dressing is being applied now in the form of sulphate of ammonia, and the sowing has to be done carefully to avoid scalding the haulm. We wonder whether much spraying will be done this year. The results were not very striking last season, but we think growers will be unwise to give it up on account of a partial failure.

All pastures have gone off in appearance, more perhaps than in reality, for although the meat is not so plentiful it is more concentrated, and better food for the animals. Farmers with a big Mangold heap left will be prizing it more every day.

Ewes have been clipped, and seem relieved to be without their wool this hot weather. The wool is very good and clean, but almost unsaleable. A few farmers have several years' wool by them, some of which might have been sold at 17s. per 14 lbs.; the price now is 7s. These are not farmers, but speculators. The wonder is that they will do it, for they never gain by it. These people are not so common as they were, for few can now afford such expensive luxuries.

The Improvement of Cereals.—Sir W. C. Macdonald of Montreal, at the instance of Professor Robertson, has given 10,000 dols. (£2000) as prizes for young people on Canadian farms who produce from seed-plots of a quarter of an acre the finest ears of Wheat and Oats yearly, and the best produce in three years. In this way 700 young men and women in the provinces of the Dominion are studying scientific farming by "selection of the fittest." The worthy Yorkshireman, a good farmer, too, who said oracularly fifty years ago that "steam was in its infancy, but agriculture had reached perfection," was a little premature, perhaps! We may learn something yet even from our own Colonies.

Vegetation and Environment.—Darwinism is not a mere metaphysical theory. Selection of the fittest involves practical application of the highest import. In Canada the authorities of the Dominion are applying it in the most hopeful way to the improvement of agriculture. First, they have proved by exhaustive experiments that no kind of seed, however excellent, suits all localities. Sixty-five varieties of Oats, for example, were tried at experimental farms in ten provinces, when it appeared that the most productive in Ottawa stood lowest on the list in Manitoba. Thus arises the first selection of the variety that suits the locality. But from apparently the same seed sprang plants far more vigorous and fertile than others, and here comes in the second selection—that of the best individual growth. As a consequence, Professor Robertson, Commissioner of Agriculture and Dairying, reported to the Select Standing Committee on Agriculture that "the only sure way of improving the grain of a locality, and of increasing the productiveness of varieties suited to it, is by a selection of the seed from the crops and plants that have succeeded best there, or under similar conditions, and by doing that year after year successively."

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Journal of Horticulture

THURSDAY, JUNE 20, 1901.

The National Rose Society.



THE whole character of the campaign is altered, was the news flashed home from S. Africa when Lord Roberts assumed the command.

That intelligence was soon confirmed. Instead of acting on the defensive, and being shut into places where they were besieged by the Boers, and when, apparently, Kruger's (reported) threat that he would drive the British into the sea seemed likely to be realised, and we seemed to be living on sufferance, an offensive campaign was initiated, and a grand march, rivalling that to Candahar, was performed, and the war carried into the enemy's country. I think we may in the same way say that the character of the operations of the National Rose Society have undergone a great change. Admirable as the Crystal Palace is as a place of exhibition, sheltered for both exhibitors and exhibits from the evil influences of our variable climate, it still had many disadvantages.

Firstly the society occupied a dependent position; it was not master of its own arrangements, but had to submit to whatever might be the wishes and eccentricities of the directors of the company. For several years, for instance, the German Gymnastic Society held their annual fête on the day of our exhibition, and the transept was filled with all sorts of contrivances by which the members could exhibit their prowess; then on another occasion they were driven into the concert room, dark and miserable, because the directors had filled the usual space allotted to us with an exhibition of carriages; while on another we were driven out of the Palace altogether because his Majesty the Shah of Persia was to visit it accompanied by the Prince and Princess of Wales, and as a consequence the exhibition had to take place in a tent, which was so low and stuffy, and so crowded with visitors, that when the distinguished personages arrived there the flowers were nearly all faded and open-eyed. Moreover, the society was dependent on the

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liberality of the Crystal Palace Company for the reception of a subsidy which enabled them to offer to their members a large and almost plethoric schedule, which, however, had the advantage of offering prizes to exhibitors of all kinds and descriptions. By means of special prizes offered by its members, additional interest was given to the exhibition; challenge trophies were subscribed for to the value of 50 guineas each by both amateurs and professionals, and these formed the blue ribbon of the exhibition. When gained by a professional man it was the best possible advertisement he could have, while the amateur gloried in a grand piece of artistic work to adorn his sideboard. There are some, indeed, who disregarded it, and said they would rather "hab de cash," but they were the exceptions to the rule.

The society fared no better when it linked its fortunes with the Royal Horticultural Society in its worst days of South Kensington, and so it went back to the Crystal Palace. Great changes in its personnel had taken place, many of the earlier exhibitors had passed away, and a great change had taken place in the character of the exhibition. This was due to the initiative of Mr. Charles J. Grahame, who had been a generous supporter of the society at all times, and who proposed a plan, which some of us looked askance upon at first, but of which we afterwards saw the value. Its object was to prevent small growers being swamped by the giants. People have little idea how this was carried on. I remember one exhibition, for instance, where an exhibitor, who grew his plants by tens of thousands (I speak advisedly), not only competed in the big class, where, of course, he ought to have shown, but also in the class for six blooms! Mr. Grahame's plan was to divide the exhibitors into sections, according to the number of plants grown. Nor was this all. The exhibitor was not allowed to choose which of two classes he should exhibit in—that is to say, for twelve or twenty-four blooms, and to make his choice on the exhibition day, when he saw what chance he had of winning in the race. He had to select either one or other when he sent in his notice.

This had the desired effect, for the plan encouraged those who were anxious to commence Rose exhibiting to begin in a small way, and gradually to work their way up into the larger classes, so everyone was given a fair chance, according to his ability of making his mark as a Rose exhibitor. Nor were the exertions of the society confined to the metropolis; as it was a national society it was thought that exhibitions ought to be held in various parts of the country, and as the northern growers complained that the metropolitan show was too early for them, it was arranged that a northern show should be held somewhat later. But this was not enough. If the northern growers were to have a show to themselves, why not the southern, so as to allow those who lived in the more forward parts of the country to exhibit? It was said that Tea Roses were past their best when the metropolitan show was held, so it was determined that the southern show should be held the last week in June. It was a little awkward, its coming before the metropolitan show, but its usefulness was clearly seen and duly appreciated. The society has not only encouraged the exhibition of Roses, it has also published several treatises on such subjects as hybridising, pruning, and exhibiting, the decorative use of Roses in our gardens, and reports of conferences on various subjects connected with the Rose, and thus has endeavoured to create a real interest in the culture of the queen of flowers.

And now a greater and more momentous change has taken place in the society. There is no building in London where an exhibition of the National Rose Society could be held. Our first show was held at St. James' Hall, and though there was a grand exhibition of Roses, there was no public to see them, and it seemed as though all our hopes and expectations were to be shattered; the prize money could not be paid in full, and many thought there was an end of the society. The exhibitors, however, behaved nobly, agreeing to receive a portion of their prizes and to let the balance remain over. Many thought this would be till the Greek Kalends, but they did not understand the power of those who had taken the matter in hand, as in a couple of years the balance was paid. The Society has also been fortunate in another way. I have during a long life been connected with many societies of various descriptions, but I do not think I ever knew one which had a committee so large in numbers, and yet so thoroughly

willing to give themselves to its work. I have sometimes heard it said that the best sort of committee was one of three, two of whom were always absent. It is not so with the National. Our committee room is always crowded at our meetings, and everything is carried on in a thoroughly business-like way. It was owing to the exertions of one of its members, the late Hon. and Rev. J. T. Boscawen, that the then Princess of Wales was induced to become our patroness, and as Queen Alexandra she has now graciously acceded to the request to continue so.

But to return, in order that we may survey the present position of the society. As I have already said, there is no building in London which will contain our exhibition, but the Treasurer and Benchers of the Inner Temple have kindly consented to allow us to hold our exhibition for the current year in their gardens on the Thames Embankment, where the very successful shows of the Royal Horticultural Society have been held for some years. And so we are looking forward for the 4th of July next, for what we hope will be the grandest exhibition of Roses ever held in London. Everything has been done to insure success; a guarantee fund of upwards of £300 has been subscribed, and as we know that a great many people are more interested in the beautiful arrangement of Rose blooms than in the exhibition blooms which so amply testify to the skill of the cultivator, a number of classes have been arranged for in this section. It only now remains for every member of the society to do his or her utmost to make the exhibition in every respect a perfect success. The council and secretary of the Royal Horticultural Society have kindly arranged to give our society the most valuable assistance; they have consented that their able Chiswick superintendent (Mr. S. T. Wright) and others of their officers shall give us their aid. Of course we cannot tell how Londoners will take to it, but members of the National Rose Society from all parts of the country will be there, and we hope will bring their friends and relatives with them, and so give the amplest justification to the committee for the daring step that they have taken; and we must remember that if they do so they will put the society in a better financial position than it has ever yet occupied—D., *Deal*.

Flyless! Flealess! Frostless!

So far as the seaboard of Dublin was concerned (and we are concerned as much as elsewhere) the "merrie month" came and went, leaving us without a grievance. Ah! the growls anent the drought are forgotten—in fact, "smiling June" was ushered in with some smart showers, which easily washed them out, for they were neither loud nor deep. There has been, too, a few unkind remarks about the lateness of the season, which from general observation one is not disposed to agree with. Ere this is in print (if ever it is) we shall have picked our first dish of Royal Sovereign Strawberries, and a right royal kind it is. The first day of June gave us our first picking of well-filled American Wonder Pea; the wonder about it is that so many around here cling to the small round-seeded climbers for early work. There are, of course, improved dwarf varieties, but American Wonder has been tried and trusted for over twenty years, and never found wanting, so being a bit old-fashioned we stick to the old friend that has stuck to us. Another wonder is about old enemies—viz., the Turnip fly, and a few more of that ilk, such as that "hop, skip, and a jump" fellow the Turnip flea, and the silky, subtle, Onion fly. Talk of the —; well, none of these have appeared as yet, and aphides, beyond those noticed on a few Moss Roses, are conspicuous by their absence. Certainly it was not for want of watching these fellows, which come like a thief in the night, that they have been unnoticed and unknown, for we have what a humble but worthy neighbour calls a "strong weakness" for beasties, be they inside or out; hence it has been noticed in relevance to the above freedom so far enjoyed, that but one solitary house fly came to our cottage as yet, and he (or she) found it apparently too lonely and left. So, so far, we are flyless and flealess, and so far, so good. Certainly we have seen a more floriferous May, but if less lavish in blossom there has been sufficient in evidence to take comfort in prospective benefits. The thermometer on two occasions went perilously near to freezing point, in fact actually touched it in the wee sma' 'oors o' the 13th (unlucky number), but somehow, as each day came and went in glowing sunbine, danger from that quarter was never apprehended; and now the critical month is over, and "showery June's dark south-west gale" has brought moisture as well as mess by strewing the walks with twigs and tender foliage, one cannot but feel that the departed month left little to grumble at, and much to be thankful for.—K., *Dublin*.

P.S.—Possibly farther inland a different version would obtain, but that's another tale.



Odontoglossum crispum var. *Annie*.

THIS handsome variety, which we illustrate, appeared at the recent show of the Royal Horticultural Society in the Temple Gardens, when the Orchid Committee recommended a first-class certificate to it. It is certainly one of the finest of the blotched varieties of *O. crispum*. The flowers are large, white, suffused with red, and plentifully spotted with reddish brown. It was staged by H. T. Pitt, Esq. (grower, Mr. Thurgood), Rosslyn, Stamford Hill.

Lælia purpurata.

EVERY season brings with it some new break in this very delightful species, and visitors to the recent Temple Show had plenty of opportunities for comparing any that they happen to have in flower with the best in existence. There is a surprising number of really fine forms existing in various parts of the country quite unsuspected by those "in the know." Quite recently I was looking in a florist's shop, and was surprised to see a nice plant of a truly remarkable form, and on inquiring the price was told 10s. In any London sale the plant would have fetched quite as many guineas.

Only a few years ago I bought an immense specimen of *L. p. Williamsi* for a very trifling sum, and this passed into a large trade collection, when it was divided and sold at a high price. These opportunities are not so frequent now as formerly, but those having a number of plants should keep their eye on any likely forms. Those with deeply flushed petals, like the beautiful *L. p. Backhousei* variety, or *Ashworthiæ*, will always be rare and valuable, or those with that black-purple tint on the lip. White forms, too, are eagerly sought, and varieties with sepals and petals of exceptional width. These last are often chosen by hybridists, being usually productive of fine hybrids.—H. R. R.

Right Hon. Joseph Chamberlain, M.P., and his Orchids.

UNDER this title "*Le Moniteur d'Horticulteur*" has a paragraph which we translate literally, as follows:—"On the proposition of a group of Orchid lovers of different nationalities, it has been decided that the chief instigator of this lamentable war in South Africa, as barbarous as it is unjust, and waged against a 'small people' resolved to maintain its independence with might and main, that this chief instigator is no longer worthy of the honour of having dedicated to him one of the most remarkable of our Orchids. It expresses the wish that the specific name of *Chamberlainianum* (i.e., *Cypripedium Chamberlainianum*) in future, have substituted for it, in continental collections, that of *C. punctatum*. It is very doubtful if the name will be accepted in the *ravissant* cottage of Highbury, near Birmingham, where the minister for the colonies of the British Empire possesses one of the most important Orchid collections in England, and which enjoys great renown."

No, and probably nowhere else in this country, and our dear good friends across the English Channel are welcome to the fullest satisfaction or consolation their decision and the new name may give them.

Early Summer Melons.

THE tropical nature of the weather of late has imparted a greater value to the early Melon crops than is usually experienced. No one is in a better position to emphasise this than the fruiterer, who in some summers finds Melons somewhat of a drug on his market should the weather be both cold and sunless. One large fruit salesman recently remarked to me that he could not remember a season when early Melons sold so well, and no doubt this is only one of many such instances. Few, however, beyond the actual growers realise the trouble that Melons give in the early months of the year, and what a length of time is needed to bring them on from the seed stage to the matured fruit. In the height of summer it is possible to sow the seed and cut ripe fruit in three months, or less, but this is not so when sowing takes place in the first week of the new year. So much, too, depends on the structures, and the means of heating them, in the successful treatment of the earliest Melon.

The English markets are now supplied with foreign Melons at a time when it is scarcely possible to get them of home growth, which, unfortunately, discounts the latter's value to some extent. Of their quality I have no experience, but appearance was all in favour in the case of those I saw, judging from a market point of view. In the Longford Castle Gardens, Mr. Hazelton has had the best crop I have

seen for a long time for so early a period, and affords an instance of the value of small well-heated houses for the earliest forced crops. In one division of a span-roofed forcing range, less than 20 feet in length and 13 feet wide, over five dozen fruits were gathered in May, ranging from 2 lbs. to 4 lbs. each in weight, of the well-known Earl's Favourite, a kind that owes its origin to the Longford Castle Gardens. This is not by any means an early maturing variety, so that the time of cutting the first, which was on May 13th, might have been enhanced by some few days if an earlier one had been chosen for a portion of this crop. This is a point that in early Melon crops has a decided value, and it would be interesting to have the experience of other growers bearing on these sorts of quick maturity.

With me Frogmore Orange ripens before all others tried. Gunton Orange was procured this season on a recommendation for early ripening, but it has failed

in the race with Frogmore. The latter, too, is a good setting variety, another point of merit an early Melon need possess. It is not at all difficult to secure four fruits averaging 3 lbs. each of this kind on a plant, which, under ordinary conditions, cannot be said of many varieties when flowering takes place in March. Without abundance of steady top and bottom heat there is no gain in commencing so early in Melon sowing, though to the ambitious grower the new year brings with it the attendant contemplations of the early summer. Melons claim a joint attention with that of Peaches, Figs, Strawberries, and Grapes. Without the requisite heat, plants from an early January sowing would be overtaken by others put in perhaps a month later, particularly should the weather be cold and sunless at the time. This has been proved over and over again.

Except under special conditions there is an advantage in the growth of several sorts, whether for early or midseason use, because varieties differ materially in their times of maturity. A succession of full ripe Melons is more satisfactorily maintained when, instead of a quantity being cut on a given day, giving rise to the necessity of retarding them, they ripen successively on the plants. Complaint is sure to arise if they are eaten before or after they have reached a matured stage. At the same time, those having a good stock, and desire to keep it true to name and character, must need confine themselves rigidly to one kind in a structure. From a gardener's point of view there comes a greater interest in the adoption of a larger number than in



ODONTOGLOSSUM CRISPUM VAR. "ANNIE."

their exclusion save one. Melons are not apparently subject so much to cross fertilisation from insect interference as some other fruits, or it would not be possible to maintain the many well known stocks pure after the lapse of so many years. Unless some care is exercised there is a tendency at flowering time to employ male blooms other than those of individual plants for pollenising the fertile blossoms when there is, as is sometimes the case, a dearth to draw upon for the purpose.—W. S.

Cycle Gleanings.

"CALL me early." He was called. Sometimes he wants calling twice, but not so this glorious May morning, for the "wheels," all pumped and polished, are ready for the road, and old scenes to be revisited are new ones to the young fellow. "Up," and away down the Donnybrook road, where the young one by looks and actions shows a desire to scorch, which, in view of the long run into Kildare, is not encouraged. Lilacs and Laburnums fringing the wayside pitifully bespeak a cleansing shower to remove their dustcoats. May has been dry in Dublin, but the dryness approaches a drought in Kildare, which we have yet to reach. "Dear, dirty Dublin" is drowsy to boot as we pedal clear of the few pedestrians in evidence, the young one clearing the way with a horrible "hooter," a kind of mouth-organ, the latest thing out. However, it acts as a safety-valve for superfluous wind, and discounts scorching propensities as we take the southern quays, passing great Guinness and all his works, "the greatest thing on earth" in the way of breweries, and enter the Phoenix Park. Here is a lovely three-mile spin on smooth side tracks, which again puts the young traveller on his mettle and both of us fairly on the journey.

Spring glories in the "People's Gardens" have waxed and waned, but there are delightful vistas among the flourishing plantations of young Coniferæ, planted by the late superintendent, Mr. Dick, which help to break the flat expanse, and meek-eyed deer peer through as we pass. Exit by the old wooden gates sandwiched between Lord Iveagh's demesne and Weeks' Lodge. Weeks' big break of Royal Sovereign Strawberries look promising, as Strawberries do generally this season, but the weak spot is weeds, which the veteran grower does not keep in check as of yore when competition was less keen. Suppose it doesn't pay? Feel inclined to ask him if weeds pay? But don't; might be called "sarcy" cyclists.

No spare wind for the "hooter" now; up hill and a lumpy road. Mr. Morton, my lord's steward and gardener, has cut down the high hedge hiding one of the Farmleigh ranges, and some lovely bits of high coloured Crotons seen through the glass make the young fellow's mouth water, for he is nothing if not a gardener, unless it be a cyclist, two things which he thinks go very well together, an opinion which, for the nonce, finds no dissent. Half a promise and half a hint is given that he shall make a nearer acquaintance with Farmleigh in the future; sufficient for the day is the programme thereof. Beeches abound, and their spring dress of soft green bedecks the landscape, whilst an occasional purple or copper variety relieves the monotony, if ever there could be monotony in spring greenery. Exquisite colouring is presented by a big Larch plantation rising from a ravine—a near cut to the far famed "Strawberry Beds," now, alas! but little more than a name. Travelling improves; no grumbling, and nothing to hoot at, for the road is lonesome. Lonesome too, perhaps, looks Luttrellstown, which is entered by the Rugged Lodge, the ruggedest lodge, surely, that ever wore a thick mantle of Ivy on its shoulders. The lake lies placid under a cloudless sky, and the tall turrets of the ancient castle come into view amongst the trees. A picture of repose—the apotheosis of peace. Mr. Dent, gardener to the Hon. Mrs. Barton, cicerones us around. Peaches in the two long ranges promise well, bearing an evenly disposed crop, amidst clean deep-coloured foliage. Amongst Orchids in flower are *Cypripedium Dominiana*, *Cattleyas Skinneri* and *Mossiae*, and *Vanda teres* in high condition. Around the large conservatory, rockwork has replaced the Box edging, and many interesting Alpines nestle in it. The vivid orange of *Cheiranthus sibiricus* and intense blue of *Gentiana verna* being the brightest, if not the best of things in bloom, which are well backed up by clumps of Darwin Tulips. One plant inside the conservatory has especial claims to notice; it is *Calceolaria amplexicaulis Burbidgei*, bearing the amplexicaul flowers and foliage on climbing woody stems, showing equal hereditary influences. We take it to be the offspring of *C. amplexicaulis* and a shrubby perennial species growing in Trinity College Botanic Gardens, Dublin, from which the eminent Curator has produced a most useful and continuous winter-flowering plant, well worthy of the name it bears. The young one begins to

fidget—natural, probably, after two hours' chat between two old heads, so with farewell handgrip: we skirt the demesne *viâ* the American garden; pedal up part of the picturesque glen, and coast back to the Grand Lodge on to the Lower Road, *en route* for Lucan.

Inches thick with dust lays our road by the Liffey, and there are dogs—*bêtes noir* of cyclists—galore. What a splendid opportunity for our Chancellor of the Exchequer to swell his budget by raising the tax from 2s. 6d., which it is here, to 7s. 6d., as in England. Two cyclists at least will be with him when he feels so disposed. My young friend's startling "Faugh a ballagh" on the hooter, with much skilful steering, at last lands us in Lucan, where "convenient" to the writing on the wall, "Entertainment for cyclists," the friendly face of Brian McEvoy beams a kindly welcome from under his tall hat to endorse it. Enter the dusty ones; and a right royal entertainment it proves, seasoned with mine host's genuine Irish wit and humour. But out, and on—on till the little white tower "forninst" Leixlip denotes Kildare, where it always rains except when it's wanted, and it's wanted badly now; at least, not exactly to-day—say to-morrow.

Carton was entered by the Kellystown gate, where neither dogs nor dust are admitted, order and high keeping show with what care and solicitude the youthful duke's stately home is being nursed during his minority. Again our front wheeler has to exercise patience, already sniffing, as he is, at the distant glories of the gardens of which ear hath oft heard but eye hath not seen. They are yet afar off. We have here a thousand acres of gardening in its broad sense, of rocks and ravines; plantations and plantings of wildlings; broad sweeps of landscape and noble trees, through which the river winds its course seawards. He is wanted to grasp the spirit of freedom and beauty which reigns here pre-eminent; to see that true gardening is not confined to rectangular walls, beds, borders, teak baskets, and flower pots; and this is his opportunity. At last he is revelling among those things which his soul loveth most as yet; the goal is reached, the gardens are gained.

Carton gardens! year by year they add to their wealth of interest and beauty. The pergola has gained character with age; now one is inclined to think it is the finest thing of its kind extant, and it probably is on this side the Channel, where amateurs are prone to rear tottering fabrics of clothes-props and cross sticks, and dignify them with the title they do not deserve. Inside and out, fruit houses, plant houses, beds, and borders, all bear witness to loving care of the ministering hand. There are additions in all departments since notes were last taken, and all seems carried on in a princely style of quality and quantity befitting the noble Geraldines. The youngster goes into ecstasies over the giant pouch-like blooms of *Aristolochia gigas*, and won't be happy till he gets it—a rooted cutting with which Mr. Black sympathetically soothes his feelings. Early, indeed, does the begging propensity of genuine gardeners disclose itself. By their covetousness shall ye know them. *Nepenthes*, as represented by *Burkei*, *mixta*, and *Hookeriana*, are very fine. There is much that is handsome in the houses, and some things which are curious and rare, including a quaint *Ceropegia*, bearing blooms and bulbils. A little collection of miniature Cacti is very attractive, the "Old Man's Beard" being here honoured (?) with the name of Kruger; and — But with a possible puncture in view from the editorial pen enough has occupied space. Miss Black thoughtfully provides a substantial closing "entertainment for cyclists," and Mr. Black further gratifies the young fellow with a bundle of cuttings—literal cycle gleanings—which he is to carry home, which he does, as well as pleasant memories for the years ahead, when Time has deflated the life's wheel of—
AN OLD CYCLIST.

Olives and Insect Pests.—A most important discovery has been made by Marquis Curzio Origo, a wealthy Olive owner of Massafra, which bids fair to deliver the Olive grower out of all his troubles, so far as they are caused by the punteruolo, or weevil, and *Musca olearia*. He at once set to work experimenting with a quantity of mixtures, all containing lithanthrax, and by a process of distillation he succeeded in producing a gas which is a powerful insecticide, without being in the least injurious to vegetation. The next step was to invent a portable machine, capable of producing easily and inexpensively the insecticide fumes. Then, having selected that one out of all his Olive groves which was reputed to be the worst, owing to its proximity to untilled land, he numbered the trees, so that none should be overlooked, assigned a certain number to each machine, and started operations in April. "The whole grove," he says, "was impregnated three times over. While the machines were working under the trees the lads came running to show me the weevils (much harder to destroy than *Musca olearia*) which had fallen dead from the trees. Several days afterwards I caused a careful inspection to be made of the trees, and the branches to be well shaken, and not a single insect of any kind was to be found on the 350 big trees of my grove."



Drill Hall Rose Show.

IN conjunction with the National Rose Society, the Royal Horticultural Society have arranged to hold a special Rose show in the Drill Hall at the meeting on Tuesday, July 2nd. Special valuable money prizes will be given.

Temple Gardens Rose Show.

THE exhibition of the National Rose Society, to be held on July 4th, will be in a tent nearly 500 feet long, with four lines of staging down its entire length. Several novel features in the way of exhibits will be introduced. The band of His Majesty's Royal Horse Guards, under Lieut. Charles Godfrey, R.A.Mus., has been engaged to play during the show. Tea and other light refreshments will be served in the gardens throughout the afternoon. Luncheons will be provided at moderate fixed charges. Indeed, no trouble or expense will be spared in order to make this the most attractive Rose Show the Society has yet held.

Seasonable Notes.

THE time of Roses is upon us, and really in an early neighbourhood like this (Woking), many fine blooms are open in mid-June. The flowers appeared backward, but with hot sunshine they open all too rapidly. That handsome Tea Rose Cleopatra has given blooms of fine size and shape; Catherine Mermet, too, opens perfectly. Mrs. W. J. Grant is also among the earliest to flower; this is beautiful in any stage, yet when just opening the shape is most appealing. La France, again, is unfolding its blossoms better than usual; when at its best there are few Roses better than this, and it is free flowering. Unfortunately Roses, especially light-coloured ones, exhibit the effects of the slightest wet. It is advisable, therefore, to guard the blooms, and most necessary when the object is competition at shows. A neat contrivance supplied by specialists in Roses is made of waterproof material, and worked up and down at any height on sticks. We have known straw hats used for the purpose. Any shade that suggests itself is effective, not only in keeping promising blooms clean, but retarding them as well.

The timing of Roses for a certain date is no easy matter, and with any amount of skill it will be found that many of our choicest specimens will not be available just when we want them. One hears of exhibitors from time to time doing wonderful things in the way of Rose showing with only a few plants from which to select their flowers, but personally I would rather be on the side of numbers. There is one point in regard to exhibiting that would-be competitors will do well to remember, and that is the importance of cutting young undeveloped blooms. It matters not how we cling to splendid specimens as they are at home on the plants, may be the day before the show, we want them at their best when the judges shall see them, and it is astonishing how quickly these gentlemen fasten their attention to blooms that are past. It is perhaps just a little wanting in colour, or the centre may be slightly open, but each flower so possessed is at once termed a bad one. The art of setting up Roses for show is only obtained by experience, and prizes are not won altogether by well-grown blooms. I remember having a stand of big flowers that were attended with no little pride; these caused some disappointment when they failed to catch the judge's eye. But a lesson was learned from an older hand, who, in passing, said, "Very fine blooms—yesterday!" Faulty exhibiting is the more noticeable at country shows; the blooms are usually placed too low on the stand, they thus look dumpy and formless. Fastened a few inches high off the moss allows of nice foliage to be seen. This greatly enhances the blossoms. It is a mistake to put the Roses in a hot tent in early morning; keep them in a shady spot until a few minutes before it is time to clear for judging. The little attentions of naming, or may be changing a bloom, are better done where it is quiet.

Chief of the work among Roses is now keeping the buds free of insect pests, and disbudding. One flower to a stem is sufficient; the side buds only detract from the size of the central ones. Tying shoots with prominent buds should not escape attention; the same may be fastened so that the wind cannot blow them to and fro, and perhaps damage the opening flower by contact with a neighbouring leaf. An error is sometimes made by coddling big sappy shoots; these invariably fail to produce perfect Roses, more especially with Tea-scented kinds. Nice firm growths, with the stem of the bud appearing unduly thick, are those that we expect to develop fine flowers. Such buds take a long time to open, so full of petals are they. Madame Cusin and

Madame de Watteville are instances of this. The most promising Rose growth is that on standards. The young shoots appeared weakly, but they gradually thickened, and look like rewarding us with handsome blossoms. Probably most exhibitors are alive to this form of Rose culture. It is one on the increase, and, to our thinking, the most satisfactory; one can get among the plants with ease, apart from the flowers opening so well.—H. S.

Mildew on Roses.

A PITY it is that all Roses are not proof against mildew, for when once it appears on plants in the open it seems a waste of labour to battle against its spread. That fine Rose Her Majesty is among the earliest to become touched; its large foliage seems an easy prey. Mrs. John Laing, on the other hand, is a Rose with leaves that mildew will not take to. This fungus does not come so early in the season as to affect the opening of the blooms in a satisfactory manner, but it does take away the beauty of the foliage. I saw a grower recently scattering flowers of sulphur among a plantation of Roses of some extent in early morning. This clung to the leaves whilst wet, yet a couple of days after mildew was rampant. Rain, abundant rain, is the needful remedy.—H.

Synonymous Rose Varieties.

THE following Roses which are bracketed together, according to the National Rose Society's regulations for exhibitions, are considered synonymous, and must not be shown in the same stand. For instance, Grand Mogul must not be shown in the same stand as Jean Soupert:—

HYBRID PERPETUALS AND HYBRID TEAS.

{ Alfred Colomb.	{ Exposition de Brie.
{ Marshal P. Wilder.	{ Ferdinand de Lesseps.
{ Wilhelm Koelle.	{ Maurice Bernardin.
	{ Sir Garnet Wolseley.
{ Charles Lefebvre.	
{ Marguerite Brassac.	{ Grand Mogul.
{ Paul Jamain.	{ Jean Soupert.
{ Comtesse de Choiseul.	{ La Rosière.
{ Marie Rady.	{ Prince C. de Rohan.
{ Due de Rohan.	{ Lady Mary Fitzwilliam.
{ Mrs. Jowitt.	{ Lady Alice.
{ Duke of Wellington.	{ Madame A. Lavallée.
{ Rosieriste Jacobs.	{ Marie Baumann.
{ Eugénie Verdier.	{ Mrs. Harkness.
{ Marie Finger.	{ Paul's Early Blush.

TEAS AND NOISSETTES.

{ Alba Rosea.	{ Souvenir de S. A. Prince.
{ Josephine Malton.	{ The Queen.
{ Madame Bravy.	
{ Madame de Sertot.	

Rose Souvenir de Madame E. Verdier.

THIS Hybrid Tea is somewhat new, and bears flowers of capital size and shape. It is creamy white in colour, not unlike Kaiserin Augusta Victoria. As a pot plant it is desirable, the foliage being big and plentiful. A deeply built flower like this should also prove a valuable addition to the exhibitor's collection.—H. S.

Rose William Allen Richardson.

IN Woking and district there are many fine specimens of this charming Rose now in full beauty. The flowers vary in colour, and come light when the tree is growing in a hot position; but generally that apricot shade so much admired is more noticeable than usual. The most exceptional display of W. A. Richardson is in the garden adjoining Worplesdon Station. In this case the trees form a hedge, and the growth is allowed to run wild as it were. These are literally smothered with high-coloured blossoms, and give a most attractive sight. The master of the station (Mr. Spencer) is not a little proud of his Roses, which are "budded" by himself, and tended in his spare hours.—H. S.

Sweet Brier Roses.

THE hybrids raised by the late Lord Penzance have now been long enough in commerce to get big established plants, and they are certainly charming objects in the garden. No more effective method of training them could be devised than using stout poles some 10 feet high, and the growths carelessly strung to them. Fine examples so trained were noted a few days ago. These had plenty of room. Each plant, therefore, had a chance to produce its display of flowers without interfering with its neighbour. The copper-tinted Lord Penzance was very striking; Anne of Geirstein, dark crimson, and Amy Robsart, deep rose, were scarcely less rich; Lady Penzance, a variety with blooms of a soft shade of fawn, is distinct. These Briers are sweet-scented, and they grow rapidly. In addition to the above-named, Flora McIver gives blooms of a light, almost white shade, and is a very acceptable contrast.—S.

Tea Rose Golden Gate.

THIS Rose appeals to us as being very charming, it is so delicately tinted. A light shade of buff on white would describe the colouring. In shape it is exquisite, not unlike that wonderful flower Comtesse de Nadaillac, having similar large outer petals. It is of rather delicate growth, but even small shoots produce large blossoms. We would like to see a dozen fine flowers of this Rose placed alongside a dozen of any other Rose, and if prizewinning were the object Golden Gate would not be far behind. To exhibitors who "bud" their own Roses we would suggest that they look well after this not over well-known Rose.—H.

Dawson Rose.

THE Dawson Rose is a hybrid of much excellence, resulting from a cross between Rosa multiflora and H.P. Général Jacqueminot. There seems to be very little trace of the latter variety, unless it is in the presence of somewhat strong and recurved spine. There is a wonderfully fine bed of this Rose blooming gloriously in the arboretum on the north side of the lake at Kew at the present time. The bushes have sent up long, stout, arching shoots, along whose entire length short lateral flower clusters, of semi-double deep pink flowers, have developed. The bed occupies the corner at the divergence of two main grass pathways, and being in massive display, the grand effect can well be imagined.—D.

Certificated Plants.

The Iris.

AT the beginning of the last century some thirty or so species and sub-species were in cultivation, though it does not appear that *I. Xiphium*, which Mr. F. W. Burbidge terms the Spanish Iris, and *I. xiphoides*, the English Iris, were in cultivation at that time under these distinctive names. During the time the Floral Committee has been in existence a large number of awards have been made, but very largely in recent years. The first to attract attention was *Iris iberica*, shown by the late Mr. T. S. Ware over thirty years ago. Mr. Burbidge points out in his "Propagation and Improvement of Cultivated Plants" that "while the Dutch florists have sedulously gone to work to improve the European Iris, the Japanese gardeners have been equally industrious, and have long cultivated a race of extremely variable forms of the purple golden-rayed *I. laevigata* (Kämpferi) and *I. setosa*. These were first introduced to English gardens about 1873, through the exertions of Herr Max Leichtlin of Baden Baden," and nearly all the awards made to Irises by the Floral Committee between 1872 and 1884 were to varieties of *I. Kämpferi*. Between 1884 and 1887 not more than half a dozen awards were made, four of them to Japanese forms, the remainder to varieties of *I. germanica*. Of recent years the Irises have been classified, but the experience of a lifetime is necessary to master them in all their details. Dwarf, early flowering forms are now numerous, and many of them very beautiful; *I. reticulata* still holds its own for its marked individuality of character. The most popular are the English and Spanish types, both of which are represented in gardens by large numbers of varieties, while the Spanish in particular are very largely grown to cut for market purposes. The Iris is one of the most popular flowers at the present day.

Incarvillea.

I. Delavayi, which was awarded a certificate of the first class, when exhibited from the garden of Sir Trevor Lawrence, is classed as a hardy plant, and was introduced from China a few years ago. The plant has long, serrated foliage, and produces on tall flower spikes numerous large blossoms, which have been likened to those of an *Allamanda*. The colour is bright red; it is a very fine and striking subject, and can be raised from seeds.

Ipomæa.

The fine species, which our forefathers grew with success in the middle of the last century, are not now, to all appearance, nearly so much grown as formerly; such, for instance, as *I. Leari*, *limbata*, *rubro-cærulea*, &c. Occasionally one meets with them, and then, while they compel admiration, one cannot but regret that such splendid subjects appear to be in danger of falling into neglect. In 1865, *I. sanguinea*, a strawy scarlet flowered form, received a certificate when exhibited by Mr. Bull, but the botanist does not appear to recognise it as a species. *I. Thomsoni* received a similar award in 1884, when shown by Messrs. Veitch & Sons, but it does not seem to be now known under that name. The old climbing *Mina lobata*, introduced from South Mexico in 1841, is now classed as *Ipomæa versicolor*. A form known as *I. imperialis*, or Japanese Giant *Convolvulus*, is a larger

and improved type of the well known *Convolvulus major*, but producing very large flowers of varying colours.

Ixora.

At the time of the formation of the Floral Committee, *I. coccinea* and *I. alba* (the latter not being now a recognised species) were about the only two in cultivation. In the sixties, *amalis*, *crocata*, *rutilans*, and *Dixiana* received awards. The last named is a species introduced in 1868. In 1874 *Fraseri*, a species, appeared, followed by *formosa*, *regina*, and *Westi*. In 1878 *I. macrothyrsa*, which is known as *Duffi* and *salicifolia*, was introduced, but it was not certificated until 1894, and it is now very finely exhibited by Mr. James Cypher of Cheltenham, who grows it into large specimens, carrying several immense trusses of bloom. *I. coccinea* is much grown in private gardens for cutting purposes; it is also a favourite exhibition *Ixora*. *Chelsoni*, *Colei*, *Fraseri*, *Pilgrimi*, and *Williamsi* are also found in collections of stove and greenhouse plants at flower shows.

Kniphofia (Tritoma).

The group of these hardy herbaceous plants, which we know popularly under the expressive, but somewhat undignified name of Red-hot Poker, also Torch Lily and Flame Flower, are invaluable for their autumn blooms, and species or varieties have engaged the attention of the Floral Committee from time to time. The genus comprises several species. The dwarf *Macowanii*, introduced from South Africa in 1874, was the first to receive an award, having been introduced in that year. *K. caulescens* was introduced from the same place in 1862, but it was not certificated until thirty years after. In 1893 an award of merit was made to one under the name of *Osiris*, and in 1895 *K. Pfitszeri*, one of some very new hybrids, in which the predominating colours are yellow and orange, also received an award of merit. Two very fine forms received awards of merit in 1900; one was *Triumph*, represented to be the finest of all the new Torch Lilies, producing bold spikes of orange-yellow blossoms, and *Leichtlini aurea*, a variety of a bright orange colour, with protruding golden anthers. *K. Burchelli* flowers in early summer. One known as *K. Nelsoni* is a splendid acquisition, dwarf, floriferous, throwing a succession of spikes of blossoms of a bright flame colour. Two very fine forms of the well known *K. Uvaria*, named respectively *grandiflora* and *nobilis*, are noble subjects, both of tall growth, and very striking. There are a dozen or so of the new hybrid forms, and they are all valuable border plants.

Lachenalia.

L. pendula, the drooping *Lachenalia*, and *L. tricolor*, the three-coloured form, have been with us for considerably over a century, but it was not until 1881 that a certificate of merit was made to a fine hybrid obtained by the Rev. J. G. Nelson, Aldborough, and named *L. Nelsoni*. This is a very handsome yellow-flowered, and one of the most popular in the present day. In 1885 a similar award was made to *Aldbrough Beauty*, another of the Rev. Mr. Nelson's hybrids. Another raiser, who was rector of Cawston, raised several hybrids also, and one of these, *Cawston Gem*, obtained an award of merit in 1896. Since that time Mr. F. W. Moore of the Glasnevin Botanic Gardens, Dublin, has sent several handsome hybrid forms to the meetings of the R.H.S., and to one of these, *L. quadricolor maculata*, a certificate of merit was awarded in 1895. In the spring of the present year Mr. Moore obtained awards of merit for two brilliant coloured varieties—viz., *Kathleen Paul* and *Phyllis Paul*, but no information was forthcoming as to their origin. A Dutch catalogue contains as many as two dozen species and varieties, so there is ample material to select from. The *Lachenalia*, which has many claims on the lovers of flowers, is becoming much more popular than it was a few years ago.—R. DEAN, V.M.H.

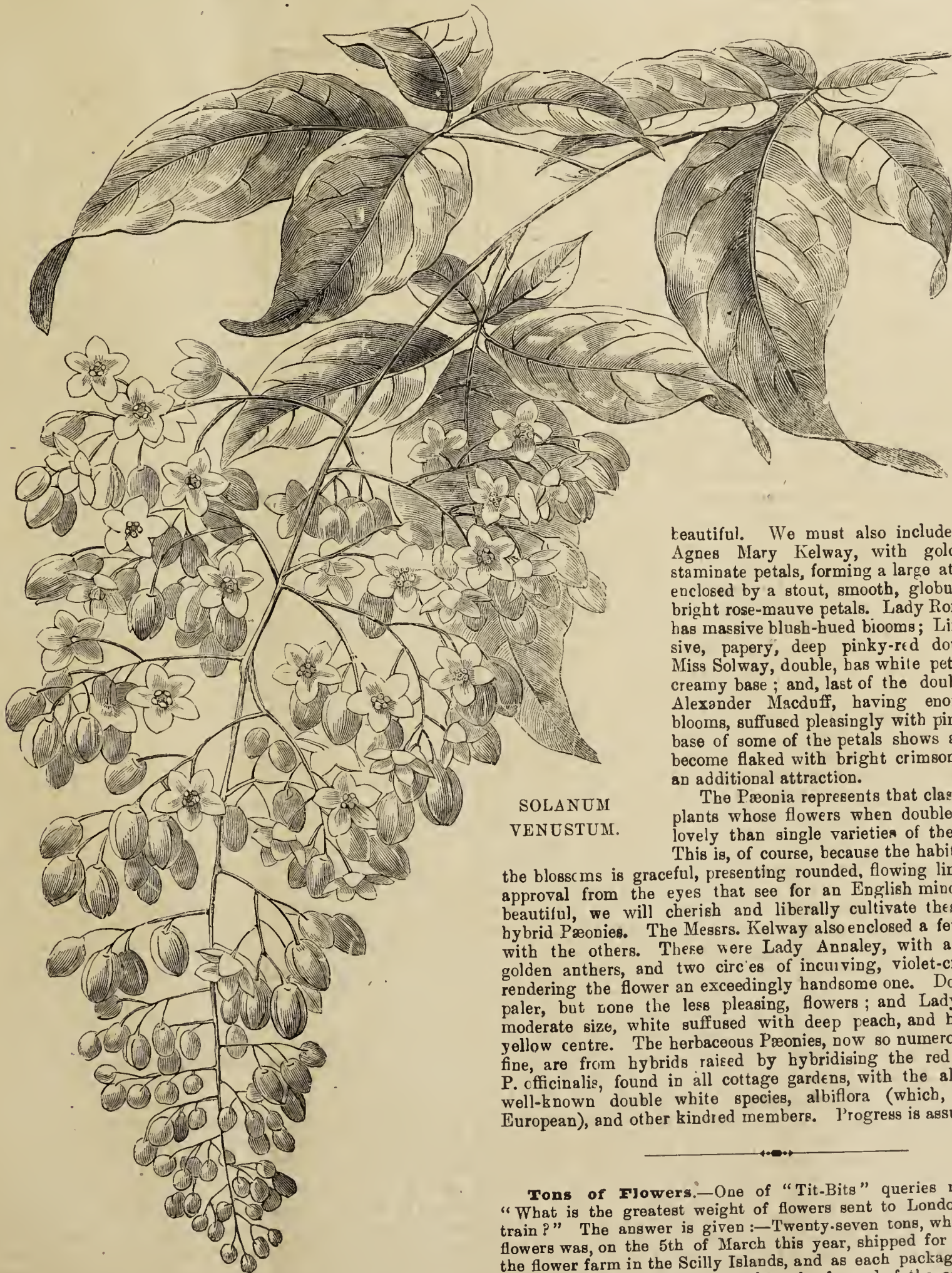
Solanum venustum.

THIS beautiful species requires for its growth the temperature of a stove. It has handsome panicles of soft lavender or mauve-coloured flowers, as shown in the woodcut. When in good condition it somewhat resembles *Petræa volubilis*, especially after the calyxes of the latter have fallen. Its treatment is simple; a good turfy loam and a moderate proportion of sand, with a little well-decayed manure, constitute a compost that suits it admirably. The plant grows fast under good treatment, and will need occasional pruning to keep it in shape; but the best way is to train the branches up the roof, and allow the shorter flowering shoots to hang down, so as to display the fullest grace of the pendent trusses. A very good figure appeared in the "Botanical Magazine" about thirty years ago, when the plant was stated to be a native of Brazil.

Pæonies.

OUR gardens would be poor indeed were all the splendid flowers and shrubs which have been gleaned from the Celestial Empire withdrawn. Tree Pæonies and *P. officinalis* originally came from China and Japan, brought thither by Robert Fortune and Von Siebold. We received an armful of these magnificent hardy flowers all the

shrubberies, what can possibly be finer than massive bush plants of such varieties as Lady Beresford, with its deep pink outer petals and soft creamy centre suffused with blush? Or, again, what more adorable than Portia, with dove-white, full double flowers? Barrymoor is a rich crimson mauve; Duchess of Somerset very deep rose pink, strong and good; Blanche Fitzmaurice, palest straw coloured centre, with a few of the petals sinuously edged with the brightest of crimson, and the broad outer petals flushed pink, are all exceedingly



SOLANUM
VENUSTUM.

beautiful. We must also include the variety Agnes Mary Kelway, with golden-cinnamon staminate petals, forming a large attractive disc, enclosed by a stout, smooth, globular corolla of bright rose-mauve petals. Lady Romilly, double, has massive blush-hued blooms; Limosel, expansive, papery, deep pinky-red double flowers; Miss Solway, double, has white petals with deep creamy base; and, last of the doubles, is Lady Alexander Macduff, having enormous white blooms, suffused pleasingly with pink; the outer base of some of the petals shows a tendency to become flaked with bright crimson, which adds an additional attraction.

The Pæonia represents that class of flowering plants whose flowers when double are *not* less lovely than single varieties of the same genus.

This is, of course, because the habit and build of the blossoms is graceful, presenting rounded, flowing lines that meet approval from the eyes that see for an English mind; and being beautiful, we will cherish and liberally cultivate these fine double hybrid Pæonies. The Messrs. Kelway also enclosed a few single sorts with the others. These were Lady Annaley, with a profusion of golden anthers, and two circles of incurving, violet-crimson petals, rendering the flower an exceedingly handsome one. Doris has much paler, but none the less pleasing, flowers; and Lady Jeune is of moderate size, white suffused with deep peach, and has a golden-yellow centre. The herbaceous Pæonies, now so numerous and really fine, are from hybrids raised by hybridising the red old-fashioned *P. officinalis*, found in all cottage gardens, with the almost equally well-known double white species, *albiflora* (which, however, is European), and other kindred members. Progress is assured.

way from Langport towards the end of last week. Their fragrance permeated the editorial sanctum, and brought half a dozen of the assistants from the other rooms, whose sensitive olfactory organs had been sweetly incited. The flowers in themselves were beautiful beyond praise, strong and fresh. Bordering the outer edges of

Tons of Flowers.—One of "Tit-Bits" queries recently was: "What is the greatest weight of flowers sent to London in a single train?" The answer is given:—Twenty-seven tons, which weight of flowers was, on the 5th of March this year, shipped for London from the flower farm in the Scilly Islands, and as each package weighs only a few ounces, some idea may perhaps be formed of the enormous bulk represented in 27 tons. A steamship brought the flowers from the Scilly Islands flower farm to Penzance, where the huge floral consignment was smartly taken in hand by the Great Western Railway officials, and early in the evening a special express train, containing nothing but flowers, was speeding its way to London. It is said that over £1,000,000 is spent by Londoners for flowers yearly.

NOTES & NOTICES

Weather in London.—Since Thursday, the 13th inst., the weather has been ruffled; ominous rain clouds have been driven across the skies by brisk winds, which on occasions have been cold indeed. The general temperature has been warmer than the days between the 10th and 13th.

Gardening Appointments.—Mr. J. Kelley, for the past seven years and a half with J. Backhouse & Son, Ltd., York, has been appointed assistant secretary to Curtis, Sanford, & Co., Ltd., Devon Rosery, Torquay, and has entered upon his duties. * * Mr. James Davis, for the past fourteen years head gardener to Geo. Sheard, Esq., J.P., The Woodlands, Batley, has taken over the market gardens at Bradley, near Huddersfield, for many years carried on by the late Henry Langley. Mr. J. Caswell, for the past three years gardener at Scarletts Park, Twyford, Berks, as gardener to G. Williams, Esq., Piggotts Manor, Elstree, Herts.

Honouring a Scottish Gardener.—On Thursday, June 13th, Mr. John Machar, the successful gardener at Corona, Broughty Ferry, was entertained by the members of the Horticultural Association and friends in this district on the occasion of his leaving to assume the position of land steward and overseer to the Earl of Donoughmore on the Kilmanahan Castle and Knocklofty demesne, near Clonmel, Ireland. Among those present were Mr. W. P. Laird and Mr. D. Hutchison. Mr. David Croll presided at the meeting, which was largely attended. Mr. Machar was presented with an aneroid barometer for himself, and handsome piece of silver plate for Mrs. Machar.

Kent Fruit Crop.—The fruit growers of Kent are very doleful about the outlook for the season, especially as regards "soft" fruits—Strawberries, Raspberries, Currants, and the like. Rain is wanted badly everywhere, and unless copious quantities fall soon many crops will be ruined. Cherries alone are thriving. In most places the trees are heavily laden and healthy looking, and the small stone fruit crop looks like being a bumper one. Some interesting reports have been collected by the "South-Eastern Gazette" from growers in various districts of the county. Strawberries may yet be saved by immediate rain, so the majority declare, but Currants, especially the black species, were past praying for. Gooseberries will nowhere come up to the average, while the yield of Raspberries promises to be wretched. Kent claims a small fruit acreage of 66,749 acres, equal to one-third of the total small fruit acreage of the country. Devonshire and Herefordshire cultivate more orchard land, but even in this respect Kent is not far behind the leaders.

Wreaths Cast on the Waves.—"For the first time on this side of the continent," reports the "New York Herald" of May 31st, "the countless graves of the great deep were decorated yesterday from the deck of the battleship 'Massachusetts,' now lying at the Brooklyn Navy Yard. This was in accordance with the movement recently set on foot in California, and endorsed by Admirals Dewey, Sampson, and Schley. 'Strew flowers on the ocean waves on Memorial Day,' was the watchword recently sent far and wide by those interested in the movement, at whose head is Mrs. A. S. C. Forbes, of Los Angeles. The service was conducted by Chaplain Wright of the 'Massachusetts,' who spoke briefly. A requiem hymn was then sung by Yeoman Snyder of the ship's company. Several beautiful wreaths borne by the blue jackets were now brought out to the gangway, but before casting these upon the water the chaplain repeated the decoration hymn:

Cover them over with beautiful flowers,
Deck them with garlands, those brothers of ours,
Lying so silently by night and by day,
Sleeping the years of their manhood away.
Give them the meed they have won in the past;
Give them the honours their future forecast.
Give them the chaplets they won in the strife;
Give them the laurels they lost with their life.

Lifting the first wreath, the chaplain then said, 'For our heroes,' and cast it out upon the gently lapping waves. The second wreath was then given 'For loved ones.' Finally, raising in both hands a large wreath and saying, 'In tender memory of all God's children who have perished at sea,' he let it fall into the water, all the heads of the ship's company being reverently bowed. At half past eleven o'clock the ceremony closed

Hybrid Phalaenopsis.—It may interest orchidists to learn, says "Indian Gardening," that Mr. Gisselere, superintendent of the Agri-Horticultural Society's Gardens, Alipur, East Indies, has been hybridising several of this genus, and will shortly be able to add a few new hybrids to our existing varieties of Phalaenopsis.

Insect "Trap-lanterns."—Mr. E. P. Felt, State entomologist of New York, in a report says:—"Expensive experiments conducted at Cornell University have shown that the trap-lantern cannot be recommended as a practical means of controlling many insect pests. Beneficial as well as injurious insects are captured, and some pests, like the codlin moth, are taken in very small numbers."

National Chrysanthemum Society.—The annual picnic and outing will, by the kind permission of Alfred Tate, Esq., take the form of a visit to Downside, Leatherhead, on Monday, July 8th, in order to see the Rose garden at its best. The cost, inclusive of railway fare, conveyance to and from Downside, with use of the conveyance during the day, dinner and tea, will be 9s. 6d. Ladies are specially invited. Further particulars may be obtained from Richard Dean, V.M.H., secretary, Ranelagh Road, Ealing, W.

Spraying of Fruit Trees.—On June 8th Mr. G. Berry gave a lecture in the County Council Experimental Orchard at Haydon Bridge, the subject being "The Spraying of Fruit Trees for Insect Pests." The lecturer dealt with the winter moth, the codlin moth, and the Apple blossom weevil, and showed the method of spraying the trees with a mixture of Paris green and water ($\frac{1}{4}$ oz. Paris green in paste to 4 gallons of water). He also recommended the use in autumn of a mixture of resin and oil, painted in a band round the stem, to prevent the female moth, which is wingless, from crawling up the stems of the trees to deposit her eggs. The lecturer also spoke on the American blight, and the best methods of dealing with it.

Bedding in London Parks.—The greater part of the bedding in Hyde Park has now been completed, and most of the specimen tropical exotics are placed out in their summer quarters. Battersea Park seems to lag a little, and a considerable number of plants will be placed out within the next few days. We are almost at the longest day, and when summer bedding is not finished till this time the remaining season is very short. Regent's Park seems to be as well forward and as handsome as any we have lately visited. In Hyde Park there is a beautiful bed filled with profusely flowered plants of Viola Countess of Kintore, amongst which are the dark green arching branchlets of Cytisus præcox, the latter now out of bloom, of course, but the effect is splendid.

Marriage of Mr. R. C. Notcutt.—On Wednesday afternoon, at St. Mary Stoke Church, Ipswich, the marriage of Mr. Roger Crompton Notcutt, son of the late Mr. Stephen Abbott Notcutt, and Miss Maude Hetty Smith-Fielding, daughter of Captain and Mrs. George Smith-Fielding, took place. The wedding was a quiet one, the invited guests being almost all relatives. An informal reception having been held by Mrs. Fielding at Hillbrow, Belstead Road, Mr. and Mrs. Notcutt left by the 4.22 train, for London, on the way to Scotland, where the honeymoon will be spent. Among the numerous presents received were an antique Sheraton clock, bearing the inscription, "Presented to R. C. Notcutt by the staff at the nursery, Woodbridge, June 12th, 1901," and a silver mounted vase from the staff at the Broughton Road Nursery, Ipswich.

Back to Village Life.—Like the housing problem, which confronts urban and other councils, the equally serious and in many respects co-related question of retaining the population in rural districts, and of attracting town dwellers back to the land, is constantly engaging the attention of various individuals in numerous parts of the kingdom. We have received a penny pamphlet, written by Rev. W. J. Spriggs-Smith, vicar of Terrington, St. John, Wisbech, entitled "The Way Back to Village Life, or The Citizen, State, and Duty." Mr. Smith summarises his arguments, and suggests remedies which seem to us to be entirely inapplicable when facts are considered. He suggests more capital to properly work the land, more labourers to keep it clean, and more farmyard manure to sustain it. Given these three necessities, he says our fields would yield an increase in quantity and quality, which would partly make up for the low price of Wheat. He places the blame of the present depression on the short-sighted policy of the magistrates of a century ago, who multiplied their own acres and rents; but for the labourer there was low wages, bad cottages, and no land for allotments.

American Plant Novelty.—Gerbera Jamesoni was awarded the prize of 50 dols. for the best horticultural novelty at the recent exhibit of the Horticultural Society of New York, its main competitor being the new golden Pandanus Sanderi. The decision of the judges in the matter has not given universal satisfaction; far from it.

Canker in Apple Trees.—The treatment for canker of Apple trees recommended by the Delaware Station, is to paint the affected trunk with a combination of 1 pint whale oil soap, 3 pints slaked lime, and 4 gallons water, thickened to the right consistency with wood ashes; or with Bordeaux mixture, thickened with lime until like whitewash.

Boston's New Horticultural Hall.—On Monday evening, June 3rd, 1901, the third hall owned by, and constructed for the purposes of, the Massachusetts Horticultural Society since its inception, was formally opened by an exhibition. Dedicatory exercises were considered unnecessary, so that no account of any oratorical effort, enlogistic or otherwise, shall pass down to future generations in connection with this very auspicious event in the history of the oldest and most progressive horticultural body in the United States.

Destruction of British Plants.—Our contemporary, the "Westminster Gazette," had a few lines to say on this matter a day or two ago. We are now in leafy June, and the field clubs are in full swing. But it is not the men of science who spoliage Nature. The ruthless destroyers are those who make a business of providing showy plants for town gardens. Not many years ago *Osmunda regalis* flourished in many parts of the Lake District. Where is that *Osmunda* now? *Scolopendrium vulgare* (Hart's Tongue) was plentiful about Morecambe Bay, now it is almost as rare as the raven itself. And even *Asplenium viride* (Green Spleenwort) is difficult to meet with. All have been torn from their native homes to drag out a short and unnatural existence in our town ferneries.

Wanton Destruction.—A wicked and disgraceful act was committed during the early hours of last Sunday morning, when some evil-disposed person entered the garden of Mr. E. Weston, the Urban District Councillor, who lives at Vera Villa, Monument Road, Maybry, and destroyed some of his choice flowers. When Mr. Weston's family came downstairs on Sunday morning they found that half a dozen valuable standard Rose trees, which were growing in the front garden, had been cut in half with a pruning knife, and a further examination revealed the fact that a splendid Clematis tree, which was growing over the front entrance, had been cut off near the root. No doubt an attempt would also have been made to injure a magnificent Rose tree, which has been trained up the walls of the house, and which is now in full bloom, had not the man been disturbed in his nefarious occupation. Mr. Weston says that during the night he heard a slight noise in the front of his house, and wondered what it was. Next morning several footmarks were found in the grounds. The police have the matter in hand, and a reward of £5 is now offered for information which shall lead to the detection of the offender.

Memorial to the Late Mr. G. J. Symons, F.R.S.—A meeting of the subscribers to the Symons Memorial Fund was held on Tuesday, the 11th inst., in the rooms of the Royal Meteorological Society, 70, Victoria Street, Westminster. The Treasurer, Dr. C. Theodore Williams, presided. The executive committee reported that the proposal that the memorial to the late Mr. G. J. Symons, F.R.S., the distinguished meteorologist and founder of the British Rainfall Organisation, should take the form of a gold medal, had been approved, and that the sum of £713 14s. 7d. had been subscribed for that purpose. It was very gratifying to learn how greatly Mr. Symons was esteemed and his work appreciated, for the subscribers numbered 323, and the contributions ranged from 25 guineas down to half a crown. After paying for the dies for the medal, and the expenses of printing and postage, there remained a balance of £621 14s. 4d., which the Treasurer was instructed to hand over to the Royal Meteorological Society, for the interest on the same to be used for the awards of the medal. It was resolved that the medal should be awarded biennially for distinguished work done in connection with meteorological science, irrespective of sex or nationality. The following gentlemen took part in the proceedings of the meeting:—Mr. W. H. Dines (President Royal Meteorological Society), Mr. C. Hawkesley (President-elect Institution of Civil Engineers), Sir Erasmus Ommanney, Dr. A. Buchan, Mr. W. Marriott, Mr. E. M. Eaton, Mr. R. Bentley, Dr. H. R. Mill, Mr. J. Hopkinson, and Mr. R. Inwards, all of whom spoke in appreciation of the work and character of Mr. Symons.

Fruit Preserving.—Mr. W. A. Taylor, of the U.S. Department of Agriculture, is studying the subject of fruit bricks, into which fruit pulps are pressed. In France the bricks are said to be replacing canned fruits. It is said that "the bricks retain their freshness for a surprising length of time. They are all but proof against deterioration, being perfectly good and fit for use eighteen months or two years."

Bridesmaids and Flowers.—The latest idea for bridesmaids is to have baskets hanging on their arms filled with flowers of one kind. At the moment Roses are, of course, the most sought after, and at a recent very smart function only Catherine Mermets were used, and the effect was charming. The long Tosca sticks, tied with ribbons and finished with a Markart bouquet of either Lilies, Roses, or Orchids, are also seen. The latest novelty is the hat of real flowers for the bridesmaids; it is a very pretty idea, carried out in white Pelargoniums or in Azaleas.

Endurance of California's Trees.—Astonishing as the figures of heights and circumferences of the big trees of California may seem, one is still more surprised at the age of some of the trees, which cannot be less than 2500 to 3000 years old, says a contemporary. When Saul was appointed King of Israel these vast columns began to break their way through the soil. Yet they have endured, while Israel fell before Babylon, Babylon before Persia, Persia before Alexander the Great; Greece and Rome rose and fell, and Britain's Empire was built up century by century. It would seem that the California redwood trees are almost imperishable, except through the axes of the woodmen.

A Handy Fruit Sprayer.—An illustration of a "home-made spraying device for small fruits" appeared in "American Agriculturist" for June 1st. The equipment was designed and is used by J. A. Hepworth of Ulster Co., N.Y., for spraying small fruits. It is mounted on 30-inch iron wheels; width of tank, 22 inches; distance between wheels, 36 inches; tank holds 60 gallons. There are two lines of discharge here, one 15 feet and one 20 feet section. Two nozzles can be used on each hose. The machine can pass between rows of small fruit easily, one man spraying immediately behind the other. The horse walks slowly, while a boy drives and pumps at same time.

Excerpta.—Thomas Smith, the oldest citizen of Rochester, N.Y., died May 15th, at the advanced age of 101 years and five months. Mr. Smith was born in Ireland, December 23rd, 1799. He worked in nurseries until his ninetieth year. * * The New York fruit exhibit at the Pan-American Exposition is attracting much attention. There are 3200 plates, chiefly of Apples, of which latter there are 345 varieties on show. * * "La Chronique Horticole," of Paris, France, announces its future appearance as a weekly. A series of supplements, designed to form a library of horticultural reference, will be a feature of the new departure. * * The Metropolitan Public Gardens Association have suggested to the Marylebone Town Council the plantation of an avenue of trees up the centre of Portland Place. * * Mr. George Tudhope lectured before the Newport (Dundee) Horticultural Association on June 12th on the subject of "Flower and Leaf Beauty." The subject was treated from an ethical and artistic standpoint.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest:					
1901.										
June.										
Sunday .. 9	S.E.	deg. 69.8	deg. 55.3	deg. 79.8	deg. 42.7	Ins. —	deg. 62.7	deg. 59.3	deg. 54.9	deg. 33.0
Monday .. 10	N.E.	62.9	53.8	70.7	52.0	—	65.2	59.9	55.1	46.7
Tuesday 11	W.N.W.	59.9	49.8	68.0	47.5	—	64.5	60.5	55.3	41.7
Wed'sday 12	W.S.W.	50.9	50.0	65.0	48.8	0.11	63.5	60.5	55.5	41.7
Thursday 13	W.S.W.	52.9	51.2	57.2	42.3	0.03	60.5	60.0	55.7	36.4
Friday .. 14	N.N.E.	56.1	54.7	66.8	48.8	—	59.0	59.2	56.0	47.1
Saturday 15	N.W.	55.1	47.8	64.2	40.5	—	60.0	59.0	55.8	30.5
MEANS ..		58.2	51.8	67.4	46.1	Total 0.14	62.2	59.8	55.5	40.0

The weather during the week has been most dull, with cold strong wind, especially on the 13th inst.

Brayton Hall, Cumberland.

THIS seat of Sir Wilfrid Lawson, Bart., is situated eighteen miles from Carlisle. There is a station at Brayton, on the Maryport and Carlisle Railway. The Hall, a large modern house, built in 1859, is of white sandstone, and is surrounded by a well-wooded park of 350 acres. Much planting has been done by the present owner; in the park there is a lake $8\frac{1}{4}$ acres in extent.

The Lawson family are derived from John Lawson, who, in the reign of Henry III., was lord of Fawkesgrave in Yorks, and from him, through a long line of illustrious ancestors, has descended Sir Wilfrid Lawson, Bart., who married the widow of Thos. Lee, Esq., of Isel, in Cumberland. Wilfrid Lawson of Isel was created a baronet by James II. Brayton Hall was purchased in the early part of the eighteenth century from the co-heiresses of the Salkelds by Sir Wilfrid Lawson, third baronet, one of the Grooms of the Bedchamber of George I. The gardens at Brayton are notable, and a hasty visit

and large Marantas, including *M. Sanderi*, were pointed out. *Phyllotænium Lindeni*, two fine, healthy specimens, were noticed, and a fine specimen of *Maranta Cooperi*; whilst several dozen plants of *Anthurium Scherzerianum Wardi* and *A. Scherzerianum giganteum*, bearing many brilliant scarlet spathes, shone conspicuously.

Numerous fine plants suitable for table, with coral berries, were represented by *Ardisia crenulata*. *Stephanotis* and *Allamandas* are trained thinly on the roofs of the warm houses. *Eucharis amazonica* in large quantities, and in the best of health, were seen; as also hybrid *Hippeastrums* in dozens, full of gorgeous flowers. There are several houses devoted entirely to Orchids. *Odontoglossums* were very healthy looking, and two dozen large plants of *Dendrobium nobile* in 7 and 8-inch pots, together with *D. nobile nobilius*, having vigorous pseudo-bulbs wreathed in flowers, formed a splendid feature. Numbers of plants of *Cymbidium eburneum*, with pearly white flowers, and *Cymbidium Lowianum* producing vigorous spikes. *Dendrobium Dalhousieanum* was represented by three remarkable plants, whose health and vigour could hardly be surpassed. The



BRAYTON HALL, CUMBERLAND, THE SEAT OF SIR WILFRID LAWSON, BART.

in the month of March will not by any means allow me to do credit to them and their able manager, Mr. Stewart, who has been here for fourteen years.

There are large kitchen gardens, an orchard of young Apples, mostly eight or nine years old, extensive flower and pleasure gardens, and a rosery in the grounds. A very fine Fern-leaved Beech and a large Irish Yew have been planted. Scented-leaved Pelargoniums and Ageratums were in the vineries, and Calceolarias in the frames. Early flowering Chrysanthemums in hundreds were being inserted as cuttings from old stools, wintered in cold frames, for planting in the flower beds and borders. A fine lot of Marie Louise Violets were seen in a long brick pit, full of large flowers, and Mr. Stewart informed me he had been gathering regularly since Christmas. Chrysanthemums in pots are grown to the extent of five or six hundred.

The plant houses at Brayton Hall are all span-roofed, and are placed around three sides of a quadrangle, with a total length of 450 feet. Fine-foliaged plants are well and largely grown at Brayton, Crotons being in great variety. I saw seven plants cut back and devoid of foliage, growing in large pots and tubs, 4 feet high, and as much in diameter, and others in $4\frac{1}{2}$ -inch pots. The varieties, Ruberrimus, Prince of Wales, Princess of Wales, and Clarkei, were especially noticed as fine in colour. Many fine-leaved Anthuriums

pseudo-bulbs made last year were 5 feet in length and of unusual thickness, whilst those two years old had numerous racemes of cinnamon and chocolate-coloured flowers. *Cattleya labiata autumnalis*, *C. Harrisonæ*, and warm house *Cypripediums*, figured in great quantity and excellent quality.

There are four large vineries and four Peach houses at Brayton. Strawberry Royal Sovereign is forced plentifully. French Beans are also much forced. There is a small corridor connected with the fruit houses, the roof of which is covered with climbing Roses, and underneath grow Azaleas and other hardwooded greenhouse plants. The greenhouse in March contained a display of sweet Jonquils, Narcissus, Hyacinths, and Freesias, with a fine batch of several dozens of Abyssinian Primroses, having silvery foliage covering their pots, and five or six spikes of yellow flowers rising therefrom. The Palm house is a large circular structure situated away from the other glass houses in the pleasure grounds, containing many Palms of all sizes, from 12 feet downwards, including Kentias, Arcas, Chamærops, Latanias, and Cocos. Two fine specimens of *Cycas circinalis* were here. There are many other things of interest in the gardens at Brayton, but as I took no notes this article may fail to do full justice to these fine gardens, and to the abilities of Mr. Stewart, Sir Wilfrid's able gardener. —F. STREET.

Lecture at Chiswick.

ON June 12th Prof. Geo. Henslow, M.A., V.M.H., &c., delivered a lecture on "The Propagation of Plants Without Seeds." He pointed out that roots can always form perfect branches, so long as they are in a condition to do so. Elm trees, from whose roots the soil has been washed away (as by a river's bank), are generally covered with short but perfect shoots. In one case branches had sprung up from Elm roots to a distance of 80 yards outwards from the base of a tree that had been blown over. When roots or other vegetative organs have over and over again produced differentiated structures, these tend to become hereditary. This fact Professor Henslow emphasised upon his audience. The genus *Prunus* was cited as being remarkably liable to send up shoots from roots. Here the habit is "in the blood," as also in Raspberries, Gooseberries, Rose, and Lilac. Some species of Thistles

in the sun it produces these bulbils, a characteristic which thus gives it great persistency. The golden flowers are very abundant, and are trimorphic, like the Loosestrife (*Lythrum Salicaria*).

Gloxinias.

FEW of us recognise the beautiful Gloxinias under their revived name of *Sinningia*—*S. speciosa*. From this species have evolved the large selection of varieties such as was shown in Messrs. Webb and Sons' group (which we illustrate) at the show in the Inner Temple Gardens this year. The revived name, however, may be predicted to remain in its present obscurity, and the few botanists who are designated



WEBBS' GLOXINIAS.

have underground stems, even to the depth of 4 feet (as testified by dried specimens brought by the Professor), and every part of such stems are able to produce vegetative buds. *Anemone japonica* produces buds on its roots. The *Carex* is another well-known example. As a rule these underground rhizomatous or running stems are associated with light, loose, sandy soils. The Potato is an instance of a stem whose tip has one way or another become arrested. The question that requires an answer, however, is, Why do not the tubers elongate when produced in a light loose soil? The hereditary influence "concentrated in the blood" we must suppose is too great to allow this. The lecturer concluded by giving a full and interesting description of *Oxalis cernua*. This little plant, of which cultural notes were given on page 326, is a native of South Africa, and grows perfectly well on the chalky cliffs of the island of Malta. It was introduced by a priest named Father Hyacintho about the year 1806, and by 1820 had spread all over Malta and Gozo, even unto Egypt, and along the Mediterranean littoral. It reached Gibraltar in 1829, and in all these places it is most difficult to eradicate. It produces long, thin, thread-like rhizomes, which are remarkably prone to develop bulbils. Even when uprooted and placed

as "purists" in this matter of nomenclature can enjoy their chosen name, while nine-tenths of cultivators and others will never know any other name than the pleasant one under which we write.

At Wordsley, near Stourbridge, Messrs. Webb & Sons take great pains to maintain their superior strain of these tender exotics in the highest state of perfection. Size, form, substance, colouring, and prolificness in throwing and continuing to throw up blooms, together with sturdiness and good habit, are the objects held in view. Many houses of a suitable nature are devoted to the growing of large batches of Gloxinias, so that from such a numerous selection there is scope for the seed-selector and hybridiser to bring forth new and improved types. The form has been altered within recent years, till now the flowers are almost perfectly bell-like, velvety or smooth in texture, as the case may be, and many magnificent self-coloured and spotted named varieties are now offered. But where the strain is so good and affords so much variation there is little need to choose individual sorts. Still, folks always have special favourites, and the naming is essential if exact selections have to be furnished.



Cannas.—The following are amongst the finest of up-to-date varieties: Wilhelm Bofinger, glowing crimson scarlet flushed orange; Victory, orange salmon, edge bright golden yellow; Oscar Dennecker, brilliant orange-red, broadly edged with yellow; Fol Berthine Brunner, deep yellow, spotted crimson; Madame Camille, golden spotted with crimson; Reveil, brick-red salmon; Mrs. F. Dreer, rich yellow and faintly spotted; Duchess of Marlboro', rose with faint cerise; anrea, bright rich canary yellow; Alice Billiard, glowing orange crimson; Madame Berat, rose crimson.

The Labiates.—As an order of plants Labiatae is distinguished as including many aromatic herbs containing volatile oils, holding in solution hydrocarbons analogous to camphor, known as stearoptenes. The cultivation of Peppermint (*Mentha Piperita*) for its essential oil has long been practised at Market Deeping, Lincoln; Wisbech, Cambridgeshire; and Mitcham, Surrey. It is, however, more extensively cultivated in New York, Michigan, and Ohio, U.S.A., the oil being used for cordials and sweetmeats. *Mentha arvensis*, and its varieties *piperascens* and *glabrata*, are the sources of menthol or Chinese oil of peppermint, which has proved useful in neuralgia.

Developing the Shape of Trees.—It is something rarely noticed, yet quite true, that a well developed tree has well-developed roots; in other words, if a tree is perfectly branched on all sides, the roots will show the same development. Old gardeners who have paid attention to matters like this can judge of the root system of a tree by its top; and, in selecting trees from a nursery, mark those with branches nicely developed on all sides. A tree with strong branches on one side only will have its strong roots on the same side. This is the rule. In nurseries where observant men are employed to dig trees, they can tell where the strong roots are to be met with, and so use their spades to much better advantage than others. As it is well understood that roots will reach out for good food, advantage has been taken of this fact by placing manure on the weak side of a tree, to bring on a good root growth, looking for the branch growth at top to follow. While certainly true that the large roots and large limbs and increase of girth of trees are all on the same side, the developing of the weak side by giving it better food than the other has not been much practised. It is, however, worthy of attention by those who have trees with ill-balanced branches. Place manure or other fertilisers on the side of the tree showing thin development. Roots will reach out for this food; the small ones near it will become large and strong, and in the end the strengthening of the shoots will be shown in their increased growth. There is no doubt that many a large tree with an unbalanced top could be much improved in appearance by this means.

Rhododendrons.—The following are a few of the choicest and showiest of the large collection of hardy Rhododendrons in the arboretum at Kew:—Mrs. Mendel, rosy pink, suffused mauve, yellow blotch on upper petals; Michael Waterer, a charming, bright rosy cerise variety; John Waterer, deep, reverberating crimson cerise, with large, compact, showy trusses; Mrs. John Waterer, bright, lovely rose, suffused with a dash of crimson; Concessum, deep rose pink, the trusses tapering upward, one of the finest and most lovely. There were also *R. catawbiense pulchellum album*, with large, well built trusses of a soft, smooth, snow white, having a beautiful yellow throat blotch, it is free and has a good habit; *R. James Nasmyth*, is of a warm rose pink shade, with deep crimson throat blotch, the trusses are well built and habit good; *R. Madame Carvalho*, with neat, compact, white trusses, greenish yellow throat blotch, is exceedingly attractive; *R. purpureum grandiflorum*, not purple at all, but a hybrid shade between deep rose lavender and mauve, with speckled greenish yellow throat, is a free-flowering and good sort; *R. Lady Anette de Trafford*, blush pink, with deep, conspicuous, blackish, crimson cone on the upper part of the throat, is one of the best and most pleasing; *R. Mary Stuart* is much paler than *R. purpureum grandiflorum*, and is suffused with rose; while *R. catawbiense fastuosum* is a semi-double lavender-hued variety, very free in growth, floriferous, and of great excellence. A score of others (notably *R. Kewense*), now faded, might have been included as of equal merit to any of these.

Japanese Quince Jelly.—The Japanese Quince, *Pyrus japonica*, makes a delicious jelly, tasting not unlike Guava jelly. I made it much the same as that of ordinary Quinces, and the only trouble was that there was not enough of it. A friend, on my recommendation, made some which was not good, but she must have left too much of the core in, I think.—L. G.

Bladder Wrack.—The commonest seaweed of our coasts is Bladder Wrack (*Fucus vesiculosus*); besides being an excellent manure, of use in times of scarcity as a cattle food, when burnt into "kelp," a main source of iodine, has been employed, when charred, as Vegetable Ethiops, or as a jelly, in scrofulous tumours and glandular enlargements, and is the essential constituent in the remedy for obesity known as "Anti-fat."

Linnaea borealis.—The genus *Linnaea* (Twin-flower) always has interest to plant lovers, because its name commemorates the great Linnæus. It has been described as monotypic, embracing only *L. borealis*. Dr. P. A. Rydberg thinks there are certainly three species, and perhaps four (Torreya, May, 1901). *L. americana* is referred to in "Hortus Woburnensis," page 135, by Forbes, but was not described. *L. longiflora* has formerly been regarded as a variety of *L. borealis*. The fourth species is indicated from Asia.

Pruning Broad-leaved Evergreens at Transplanting.—It is recognised among planters that more risk attends the transplanting of evergreens than deciduous trees. This, says "Meehan's Monthly," applies with more force to those of a broad-leaved character, such as the Holly, Evergreen Magnolia, and Mahonia are examples of. Why this should be, is a surprise to many, yet the cause is not far to seek. When deciduous trees are planted it is either spring or autumn, when they are bereft of foliage. At such times the calls on the roots are not as important as they are when foliage is to be supplied. The evergreen is never without foliage, and it is because of this so much more care is required in transplanting it. There is no reason why so much care should be taken to preserve the leaves, when, by reducing their number, the safety of the tree would be so much advanced. Southern nurserymen understand this, and one and all notify their customers that leaves will be taken off of such evergreens as *Magnolia grandiflora* before being shipped. Northern nurserymen do the same in the case of the Holly, and if the rule was to treat all evergreens this way, excepting, of course, those with balls of earth, such as *Rhododendrons* usually carry, it would result most favourably. This defoliation could be practised to advantage to some degree on coniferous evergreens, the foliage of which could be partially removed when they were transplanted.

Uncommon Water Lilies.—*Nelumbium Shiroman*, the new double white Lotus, is very desirable. *Nelumbium roseum plenum*, double red, is also good. Of the newer French hybrid Nymphæas, I regard *N. gloriosum* as very fine. *N. ignea* and *N. flammea* are also fine, but propagate slowly. There are several nice new hardy American Nymphæas. I will mention four: *N. candidissima rosea* (*N. alba candidissima*, *N. odorata rosea*) is very choice. For free and continuous bloom it has no superior. Flowers are the size of the *candidissima*, and of a showy deep pink colour. *N. erecta* (*N. odorata alba*, *N. alba candidissima*) is a pure white variety with erect habit, the flower often standing a foot above the water. It is distinct and an unusually free bloomer. *N. constans* (*N. odorata rosea*, *N. superba*) I have cultivated three years. It may be classed with the *odoratas*, is much larger than *o. rosea*, colour a shade lighter than *o. Luciana*—a soft flesh pink. It will produce three times as many blooms as *N. o. rosea*. *N. superba rosea* is a pink sport from *N. superba*. The variety *N. superba* is often confused with *N. odorata* varieties. The true *superba* is a hybrid of *N. tuberosa* and *N. alba candidissima*, and has no *odorata* blood in it but is a distinct type, and the largest hardy Nymphæa grown. *N. superba rosea* promises to be a rampant grower and free blooming as its parent, while it is the largest hardy pink Nymphæa I have ever seen. Of the tropical Nymphæas I will mention "Best Red" (probably *N. rubra*, *N. Devoniensis* raised by Mr. James Gurney, Superintendent Tower Grove Park, St. Louis. I have had it two years, and it has proved one of the most abundant bloomers in my collection. The habits and size are intermediate between its parents. I am reliably informed that Frank Trelease, a crimson *Devoniensis*, originating with Mr. Gurney, is also very fine. *N. Arnoldiana* is another desirable tropical Nymphæa. It is a reverse cross of *N. O'Marana*, and is of good size. It is the best tropical Lily for winter blooming I have seen to date.—GEO. B. MOULDER (in "Meehan's Monthly").



Should Gardeners Exhibit and Act as Committeemen?

I HAVE long intended to write the Editor a few lines regarding (I am sorry to say) first-class gardeners acting both as committeemen and as exhibitors at the same show. I am not an old man, but in my earlier days I studied fruit culture a good deal, and it never occurred to me that I should ever come to exhibit in first-class company and find gardeners as committeemen, exhibitors, stewards (and even judges, in the amateur classes), all at one show. I have read with much interest Mr. Brock *versus* the R.H.S. of Ireland, and I learn he was a councilman and also an exhibitor. I should be pleased, before writing more on the subject, to have the opinion of other gardeners whether council and committeemen ought to be allowed as exhibitors.—GEORGE WADESON, *Doveridge Hall Gardens*.

A Schedule Blunder.

MR. IGGULDEN'S plain question and Mr. Taylor's comparison both seem to me wide of the mark, as neither Mr. Crump in his letters or the Shropshire Society's schedule assume that Canon Hall is not distinct from Muscat of Alexandria. After reading Mr. Adnitt's letter, which supports all that Mr. Crump has said, it seems to me that instead of a blunder, a very reasonable conclusion was arrived at after very careful consideration. The object evidently in view is to make a class that comes within the limits of the majority of gardeners. As Mr. Crump explains on page 482, unless the "blunder" had been made it would have been possible for any exhibitor to have staged eight bunches of white Muscats, and thus have been in the running for eighty points. In 1899, when admiring the large collections of Grapes in company with a very successful Grape grower whose produce has been awarded gold and silver medals, he remarked that the fact of six varieties being asked for had made the class prohibitive to the great majority of Grape growers, citing his own position with five vineries. At that date he could not have staged six perfectly finished varieties, and I venture to say that a very great majority of exhibitors are in similar circumstances; and surely, in a class where only four varieties are asked for, one-third of white Muscats is a very fair proportion. Yet it seems hard and unfair that Mr. Iggulden's two Grape-growing friends should be so hard hit (page 366) because they cannot stage eight bunches of white Muscats out of an exhibit of twelve bunches of Grapes. If it were necessary, abundant evidence would be forthcoming that the Shropshire Society has always regarded Canon Hall as a distinct variety. In Mr. Goodacre's large collection of fruit last year Canon Hall was shown as distinct with Muscat of Alexandria, and also in the previous year in his twelve dishes of fruit. The winning four of two varieties of white Grapes were Canon Hall and Muscat of Alexandria, so that I contend that Mr. Iggulden's plain question is beside the mark altogether.—W. H. WILSON, *Moor Hall Gardens, Stourport*.

Young Gardeners' Pay.

SUCH a letter as that of "An Old Boy," on page 395, is of real value to the cause for which it was written. I am sure that all thoughtful young fellows will feel that "An Old Boy" stated the case plainly and well for the "other side." That there are two sides to every question is surely agreed to by all, and it is well to have the matter looked at from both points of view. Everyone is agreed that there is room for improvement in the matter of wages, and I for one hope that the time is not far distant when gardeners will be better paid than they are at present. But meanwhile there are many things to be considered besides the mere money before we decide that it is not worth while to take up gardening as a profession. In the first place it is essentially a healthy life, and when a man is healthy he is happy, or ought to be. Of course there are some who say that a young fellow working in great heat lays up a store of rheumatism, lumbago, and other ailments, which will attack him in his old age, and no doubt in some cases this is true; but taken as a whole I think gardeners are a very healthy class of men, whether in youth, middle age, or in advanced years. Then there is bothy life. Its drawbacks are often great, comforts are few, and the life is often rough. But it has many advantages. There is no better training for a young fellow than that which bothy life affords. Living with fellows of his own age, continually subjected to good-humoured banter and chaff, the priggishness is eliminated from him if he be a prig, and he learns many lessons which will be of great value to him in

after life. He learns how to "rough it," and to give and take a joke. He forms friendships with his fellows which often last a lifetime, and few are the gardeners who in their middle age do not look back with pleasure to their "bothy days." Then, again, the young man who loves the work, and whose heart is set on becoming a really first-class gardener, is not likely to be deterred by the consideration that wages are low. He does not choose gardening because wages are good, or he would be sadly disappointed. Rather does he begin, and is urged on by the hope, that some day he may be at the top of the tree.—F. S.

Potato Up-to-Date.

COINCIDENTLY with Mr. W. Young's critique anent the quality of this now popularly esteemed variety, and his encomiums on Syon House Prolific (see page 481), I happened subsequently to note them in the course of conversation with Mr. A. Allison, manager of Mr. W. Sydenham's famous Pansy and Viola establishment at Tamworth, regarding the qualities of the former variety. He remarked that in attempting to cultivate it in his own garden, consisting of a sandy soil, it was always attended by most unsatisfactory results, both in regard to cropping and quality, whereas Syon House Improved succeeds admirably, and, up to the present time, is of excellent flavour, moreover superior in flavour to Up-to-Date procured from several other quarters. As a market variety Up-to-Date continues in favour, though there is an evident decline in favour of other varieties. In my opinion the nature of soils and manures are responsible for the vagaries of the naturally extremely sensitive organisation of this established variety.—W. G.

Systems of Growing Scarlet Runners.

THE system of growing Scarlet Runners without stakes is not very modern, and has always applied to the market grower and those who grow extensively. The stake system is, I admit, costly if adopted on a large scale; but it is, I maintain, the best for ordinary garden purposes where a few rows are sufficient for the demands of a family. If tall stakes are not available, or are objected to, shorter stakes, 3 or 4 feet in length, may be employed, topping the Beans as the growths advance above them. For my part, however, if I did not use ordinary tall stakes, Mr. Raillem's favorite plan of growing entirely without would probably be as good. Good Beans may be secured on all the systems, but I still think that supporting the growths by stakes is the most convenient and superior method, entailing but little extra trouble, and is not so very expensive. Should the latter be the greatest objection, then make a compromise, and grow Beans on each system named, to practically demonstrate which is the most satisfactory.—CALENDAR WRITER.

Copings for Walls.

IN reply to Mr. Ellison's inquiry, I beg to state that all the glass copings here are fixtures. Some of them, on south walls, have been erected twenty-five years, and the results have been sufficiently satisfactory to induce my noble master to desire me, a few years ago, to extend these copings annually. The walls are now finished, and I have no reason at present to feel disappointed with the results. Not only have the trees under them borne heavier crops of fruit than formerly, but the trees, both old and young, are more vigorous and healthy than they were previously. Some gardeners may have reasonable objections to fixed copings, but to me they have proved to be a real boon. Fixed copings are more convenient, less expense, and much less troublesome than movable ones. With reference to Mr. Ellison's remark that "he never saw a good healthy tree under a fixed coping near London," I would ask, why should not a tree grown under a 2 feet wide fixed glass coping be equally as healthy as one grown in a cool house under a fixed roof five or six times as wide? Having ventured to make what some gardeners have termed a novel experiment in utilising the framework of these fixed copings, which Mr. Strugnell has named the "Challis trellis," and which will form eventually, when the trellises are covered, an arcade against each wall, I would like to state that they are, so far, simply experimental; satisfactory as far as proved, but I cannot yet speak with certainty as to the future. Some gardeners who have seen them object chiefly on account of the partial shade they give on the wall trees, but I am inclined to think that this will prove to be rather an advantage than otherwise. These front trellises are planted with Apricots, Cherries, Pears, Plums, and Apples trained as cordons, and the small quantity of fruit that I have already gathered from them makes me very hopeful that they will eventually prove as valuable as the trees grown against the walls. I am also sanguine that the latter will not suffer in consequence.—T. CHALLIS, *The Gardens, Wilton House*.

Gadding and Gathering.

"HERE AWA', THERE AWA'."

Waterer's Rhododendrons.

The Rose Bay, the old English name for the earlier-known Rhododendrons, requires no praise; its own splendour is sufficient to win a way for it. There may be, and is, a need for the newer and more up-to-date varieties to be known and grown, and that is the purpose of the following list. The varieties, by the way, were noted amongst those shown by Messrs. John Waterer & Sons, Limited, the American Nursery, Bagshot, Surrey, in the Royal Botanic Society's Gardens at Regent's Park a week ago. Confining these notes to lines of strict utility, I will at once name and describe a number of the choicer sorts. Arranged alphabetically, they include—album elegans, soft white, of good form, and Butterianum, another fine white, which is faintly tinged with pink; this is a splendid variety, sure to be much prized. Canon Furse furnishes a splendid rose colour, with dark eye, distinct and striking; Concessum, again, affords a light variety, the flower margined with lively rose; it is one of the best. Then comes the light rosy crimson Countess of Clancarty, nicely marked, and having large, bold trusses; Countess of Tankerville presents a delicate clear rose. There is not now a preponderance of any one colour, though, of course, shades of reds, purples, and whites form the chief array. Another good white is that of Duchess of Connaught, with lemon coloured markings on the flowers of its large trusses. All the "Waterer" varieties may, at the outset, be noted as of the first water—I mean those bearing the name of any of the Waterers. First, I may bring Gomer Waterer to notice; this is a lovely blush white, and has huge trusses. Grand Arab is a brilliant crimson; J. Marshall Brooks, scarlet with a bronze eye; and then Kate Waterer, of a clear rosy crimson hue, with large yellow throat, blotched, and without doubt one of the handsomest and most attractive of hardy Rhododendrons.

As an early flowering sort, Lady Eleanor Cathcart, a lovely clear rose variety with conspicuous crimson spots, may well be chosen. Madame Carvalho has elsewhere been noted; it is charming, to say the least. In Michael Waterer we have a variety of the brightest crimson-scarlet, and splendid form. Madame H. Croux ought not to be missed; this is a magnificent white, as is Mrs. John Clutton, and all of these whites vary in greater or less degree from one another. Furthermore, they all seem too good to leave out of any selected list that may be made. Any one of them, however, can be confidently recommended.

The beautiful Mrs. Tom Agnew, a great favourite with me, has large, massively built trusses, white, with conspicuous yellowish upper throat-colour. Though words of praise have not been spared on aforementioned whites, I hope I may yet be able to obtain notice for the new variety "Mum," with enormous, splendidly built trusses, firm and compact yet elegant, the beautiful white corollas having each a lemon eye. Pink Pearl, which won such deserved encomiums when exhibited from Bagshot last year, is an early flowering sort, and has done well in different gardens, to my personal knowledge, this year. At Kew a considerable stock of it has been grafted. Few, if any, hardy pink Rhododendrons equal it in beauty and effectiveness. And I would only refer to two more, Sir Henry Mildmay, very bright rosy crimson, and William Ewart Gladstone, deep rose, with immense trusses, a most telling variety. These are a few from a collection embracing over 200 distinct varieties, and these are only the more recent introductions. Favoured with good weather, the glorious display under canvas at Regent's Park is being largely visited by ladies and gentlemen in London and the country around. I was told that on Monday, June 10th, 2000 visitors inspected the Messrs. J. Waterer and Son's exhibition.

A Cider Exhibition at Croydon.

At the show held from May 22nd to 27th, at Croydon, by the Bath and West and Southern Counties Society, there was a cider exhibition. The exhibits of bottled cider were arranged in classes, in proper order, each lot distinct by itself, on wooden shelves, as in a fruit store room, and all duly ticketed and labelled. The cider-producing counties all set up samples of their manufacture, and Somerset won first honours. On the cards attached to each entry the following questions were requested to be answered, each query being numbered. The questions were:—

- "1, What county was the cider made in?
- "2, From what varieties of fruit was the cider made?
- "3, What proportion of each variety was used?
- "4, When was the fruit ripe?
- "5, Was the crop above, or below, the average?
- "6, Are the trees usually good bearers?
- "7, What was the average weight of the Apples?
- "8, What was the specific gravity of the juice?
- "9, What nature is the soil of the orchard?
- "10, Has the orchard been manured, and, if so, when?
- "11, What manures have been used thereon?
- "12, Give any other information you may think useful."

Those who may have an interest in cider and its production will be the better able to judge of the worth of answers to such questions as the above. I may add, however, that the replies were very unsatisfactorily given, and many queries were left without any answer.

At one end of the cider shed were exhibited coloured drawings of the best known and most liberally cultivated varieties of Apples employed by cider makers. The following were included:—Red Streak, Broad-leaf Gins, Hereford Black Foxwhelp, Old Foxwhelp, Kingston Black, Strawberry, Lester's Bitters, and Hereford Catswhelp. Amongst others with these delightfully rustic and primitive appellations were Cherry Hereford, Pip Jersey, Cherry Pearmain, Royal Jersey, Royal Wilding, Lottisham Bitters, Silcox Seedling, Barton Bitters, Broadclyst Red, Sour Hereford, Yellow Bittersweet, Brown's Apple, Late Bloomer, Hereford Beeding, Painsfora, Revised Foxwhelp, and Deptford Bittersweet. I venture to say the bulk of Journal readers never before heard of such names for Apples as these. The addresses of the principal cider Apple growers, as noted at the Croydon Show, are here furnished for reference by anyone who may wish such addresses at some succeeding date:—Mr. John Watkins, Pomona Farm, near Hereford; Mr. Jaines, Staverton, near Totnes; Mr. W. Rendell, Staverton; Mr. Geo. Lloyd Baker, Hardwicke Court, Gloucester; Mr. F. J. Hayes, West Pennard, Somerset; and Messrs. James Watts & Co., Blackwell, near Bristol.

It only now remains to say a few words on the process of cider manufacture. The Apples, as a rule, are first of all placed in heaps, after being taken from the trees, a plan which greatly assists the ripening stage. Later on they are brought to the mill, are mercilessly torn with teeth, smashed and pulverised between granite rollers, after which the press is called into use, by means of which the luscious juice is extracted from the pulp. This juice is then stored in casks, and the natural fermentation begins. Then is the need for attention, and all the skill of the maker is brought into play, for this stage decides the future merit of the cider—the quality of the drink that is to be.

At this period the Apple juice is raw, requiring no expert to detect the difference between it and the after-ripened liquor, which comes only as a result of careful storing. The cider is then stored away in port wine pipes within substantial houses, often with reeded roofs, having a certain suitable temperature. The length of storage is a matter of taste and opinion, but when after two years the matured cider is taken from the wood, the trace of rawness has departed, and a choice, dry flavour has taken its place, requiring an epicure to distinguish it from the better class, light continental wines.—WANDERING WILLIE.

Early Cauliflowers.

NOTWITHSTANDING the desire on the seedsmen's part to produce Broccoli that will extend the season until the latest possible date, there is associated with it the same keenness to obtain Cauliflowers as early as circumstances permit; and these same ends are equally the aims of the gardener. There is apparently a mutual co-operation between the seedsmen and the gardeners in this common aim and object. This season, with the absence of rain, and the counter influence of the abnormal sunshine, has had a damaging effect on the early Cauliflowers, and in like manner the latest Broccoli suffered proportionately. Where glass accommodation exists, the custom usually obtains of sowing the earliest batch of Cauliflowers, and forwarding them in fruit houses, when these are only gently forced, bringing them on gradually, by the aid of pots or boxes, until they can be safely entrusted in the open-air borders. In some years these overlap the Broccoli season by some days, without any particular effort being made. Such, however, is not a desirable feat, but weather forecasts being an out-of-reach item of knowledge, dependance must to some extent be placed on chance at the time of sowing early Cauliflowers.

While many depend on the new year's sowing for the supply of matured heads in early June, others are fortunate in their treatment from an autumn sowing. The past winter and present season have been favourable for these, when the date has been well chosen. Frost was not severe enough to destroy them, and the winter's rainfall has not been such as to give rise to unfavourable effects in decaying roots and stems. Since planting them out in March, these Cauliflowers have made remarkably good growth, and show much less the strain inflicted on the January sown stock in the droughty weather experienced of late. Erfurt Mammoth, sown under a sheltering wall at the end of August, left undisturbed until the middle of March, were then planted on a well-manured early border, and growth progressed steadily until June 7th, when the first cutting commenced. At this date only a few Broccoli remained, and by the time the autumn-sown stock of Cauliflowers become exhausted the spring-sown plants will be advancing. Hand-lights are not used, but the warmest spots available are selected for planting.

In some seasons there is a distinct element of uncertainty about the results of this autumn sowing, at any rate without the aid of hand-lights; if they do not become destroyed by frost they "button" prematurely in spring. It is this trait in these autumn Cauliflowers that has given rise to the practice of sowing under glass in January or February, and a race of dwarf-growing and early-maturing sorts introduced towards the close of the last century has furthered this

course very materially. Even with this privilege I have come to regard an August sowing of Erfurt Mammoth or Early London as a necessitous speculation; if they fail from untoward nature of the elements they do not cost much in seeds or labour, and should there be no premature bolting, or blanks from the action of the winter's frost and rain, then the crop advances in value and satisfaction to all concerned. These earliest Cauliflowers come at a time when Broccoli is at a discount; when, too, the season is emerging from the winter's supply into that of summer, and the height of garden ideals are reached by employer and gardener alike. Without an adequate water supply the weather at the time of writing afforded an anxious time for many, not only in the growth of the early Cauliflower, but almost every other crop beside. The rainfall for the year is sadly deficient, and accompanied by such tropical heat and drying winds, the energies of plant growth is sorely taxed. Erfurt Mammoth, though a good one in normal weather, "buttons" readily in a small state in dry, hot weather.—W. S.

Disease in Tulip Bulbs.

We have had so many queries about diseases of Tulips, and infested bulbs have been so frequently sent during this year, that the following reply, intended specially for "W. C.," may be read and studied by other growers whose bulbs have been poorly. These fungoid diseases are all combatable by the measures here recommended.

The bulbs are infested by the Tulip mould fungus (*Sclerotinea parasitica*), which, in recent years, has often killed cultivated Tulips. The bulb is first attacked, and as the growth or flower stem pushes from the neck it is often seized by the parasite, and the progress of the disease so rapid and virulent as to completely arrest the appearance of the stem above ground. In consequence of the decay thus set up the disease spreads downwards, and the bulb gradually rots, though not, perhaps, entirely until one or more small bulblets are formed at the base of the old bulb, and these, in several instances that have come under our observation, are not affected by the disease. The usual mode of attack is, as in "W. C.'s" case, in the stem, the leaves rotting off when about 2 inches above the soil, some bulbs or plants being affected, whilst others adjoining are not infected, though in most cases the disease occurs in patches of affected plants, thus indicating that it spreads from diseased to healthy bulbs. In certain cases the mould only affects the parts above ground, diseased spots or patches appearing on the stems, leaves, and flowers; but in not a few instances it attacks the flowers whilst in bud, and they become what is termed "blind," withered, and dead, and the result is the plants do not bloom. The chief attack, however, is on the bulb, sometimes, though not commonly, at the base, frequently at the side, and generally at or near the neck. A careful examination of affected bulbs reveals the mould-forming, olive brown, or, in the early stages, olive green, minute velvety patches, which correspond to the conidial, or early form of fruiting, the conidiospores bearing innumerable conidia or spores, which, carried by wind, or rain, or soil-water, inoculate other bulbs in the locality. This form of the fungus has been given the name of *Botrytis parasitica*. At a later stage smooth lentil or kidney-shaped sclerotia, at first grey, then black, appear, mostly in the outer parts of the bulb, and are sometimes so numerous as to form black crusts. Besides these, other sclerotia are formed in the soil close to the affected bulb or bulbs, and thus there is danger of infecting subsequent bulbs planted where diseased ones have previously been grown.

We arrive, from the foregoing data, at the deductions (1), That the bulbs may be affected by the disease when planted; (2), The sclerotia from diseased bulbs may remain in the soil, and the new bulbs planted therein be infected therefrom; and (3), the disease spreads from diseased bulbs to apparently quite healthy plants in the vicinity by means of the dispersal of the *Botrytis* spores.

In the matter of preventive means the bulbs intended for planting should be carefully examined, and if the outer scales contain decayed parts on which there is an olive green mould, or even black specks, they should either be rejected or treated overnight in a solution of formalin, 1 part in 400 parts water, but the better plan is to reject the bulbs. When the mould is observed the plant should be taken up and burned to prevent the formation of the sclerotia. The soil where the diseased bulbs appeared should be dressed with quicklime, 1 lb. per square yard, slaking with the smallest amount of water necessary to cause disintegration to dry powder, spreading whilst hot, and then leaving on the surface a few days before pointing in, then taking small spits, so as to mix the lime evenly with the soil. A dry time should be selected for applying the lime, and if on ground where bedding plants have followed the diseased Tulips as soon as the beds are cleared, allowing a month or six weeks to elapse before planting the Tulips. Probably the fungus leads a saprophytic mode of life before passing to the parasitic, hence the lime destroys the former or hastens the decay of organic matter in a dead state in the soil, sweetening this and also acting as a direct food whilst rendering other elements more readily available. It is well to bear in mind that the debris of plants, even if only roots, become food for saprophytic fungi, and cultivators have

observed that the application of green manure, and also of partially decayed leaf mould and cocoa-nut fibre refuse as a top-dressing, causes Tulips and other plants to become diseased. This is probably due to the decaying somewhat raw material affording a congenial matrix for spores and sclerotia present in the ground, in which they reproduce themselves rapidly, and in the spring, when the young stems push through the soil and top-dressing, inoculation is almost certain to take place. Instead of using such material recourse should be had to artificial fertilisers, especially such as basic cinder phosphate and kainit, afterwards accelerating growth by light dressings of finely crushed nitrate of soda.

Societies.

Royal Horticultural—Drill Hall, June 18th.

THE Drill Hall on the occasion of the last meeting was almost entirely devoted to groups of hardy flowers, especially Pæonies. Cut sprays of shrubs also formed a feature. Roses were beautiful and numerous. At three o'clock Lt.-Col. J. Wheatley lectured on "Gardening in London Parks." Sir Trevor Lawrence, Bart., occupied the chair; and after the new Fellows were elected, he mentioned that 585 have been elected this year.

Fruit and Vegetable Committee.

Present: Jos. Cheal, Esq. (in the chair); with Messrs. Henry Esling, H. Marsham, S. Mortimer, Alex. Dean, E. Beckett, Geo. Kelf, M. Gleeson, A. Ward, F. Q. Lane, J. Smith, Geo. Wythes, W. Poupert, James H. Veitch, H. Balderson, H. Somers Rivers, and J. W. Bates.

Fruit was rather more prominent than usual. Messrs. Laxton Bros., Bedford, showed a number of fruits of their new Strawberry, The Laxton. It has much of the character of Royal Sovereign, but is superior to that established favourite in having a firmer flesh of finer flavour, and is of a much darker, brighter colour; the flavour is brisk and pleasant. The parents were Royal Sovereign and Sir Joseph Paxton. Mr. A. J. Harwood, St. Peter's Street, Colchester, staged five bundles of Asparagus; the produce was very heavy, and carried a fair edible proportion. Mr. W. Howe, gardener to Lady A. Tate, Park Hill, Streatham, contributed a box of Brown Turkey Figs; the fruits were magnificent, and illustrated the very best culture. Mrs. McCreagh-Thoruhill, Stanton-in-Peak, Bakewell, sent three plates of grand Lemons, and several growers showed Melons (silver Banksian medal).

Floral Committee.

Present: Chas. E. Shea, Esq. (in the chair); with Messrs. Chas. T. Druery, H. B. May, R. Dean, J. W. Barr, J. Jennings, A. F. Barnes, Wm. Howe, W. Bain, C. R. Fielder, H. Selfe-Leonard, J. D. Pawle, Chas. Dixon, E. T. Cook, W. P. Thomson, Chas. E. Pearson, H. J. Jones, J. H. Fitt, E. H. Jenkins, Wm. J. James, Geo. Paul, Chas. Blick, Ed. Mawley, Jas. Hudson, and Rev. F. Page-Roberts.

Messrs. B. R. Davis & Sons, Begonia growers, the Yeovil Nurseries, Yeovil, Somerset, staged magnificent cut blooms of double and single tuberous Begonias. The best were Catullus, crimson; Orion, scarlet; Miss Griffith, pale creamy blush; Hecla, deep brilliant crimson-scarlet; Hilda, salmon pink; and Mrs. Stothert, an exceedingly fine pale cream coloured variety. Cut sprays of showy ornamental flowering shrubs came from Messrs. James Veitch & Sons; the Golden Elder was finer than ever we have seen it, and Philadelphus Lemoinei Gerbe de Neige, together with Magnolia Watsoni, Cæsalpina japonica, and Solanum crispum, a showy species. They also showed a massive collection of Pæonies, and a group of their climbing Rose Electra. Messrs. Barr and Sons, King Street, Covent Garden, also staged a large and beautiful group of Pæonies and Spanish Irises.

Messrs. R. H. Bath, Ltd., Wisbech, were also forward with Pæonies, and staged one of the loveliest and best collections. We can only draw attention to the following—Lady Carrington, Grandiflora nivea, Sydonie, Anguste Mieller, Canarie, Mons. Boucharlet, Ceres, Saturnalia, nivea plenissima, and Madame Bucquet. Messrs. Paul & Son, The Old Nurseries, Cheshunt, staged a grand exhibit of garden Roses; and from Mr. Amos Perry, Winchmore Hill, N., came some choice hardy plants. Messrs. T. S. Ware, Ltd., of Hale Farm Nurseries, Feltham, had hardy flowers, including Veronica amethystina, Campanula persicifolia Moerhumi, Delphinium chiuensis, Incarvillea Delevayi, Heuchera sanguinea, and numerous first-rate border plants.

Regal Pelargoniums and the hybrid varieties from Ivy-leaved and Zonal crosses, together with such fine double tuberous Begonias as Arthur Wainwright, crimson; Mrs. H. J. Jones, rosy pink, magnificent; Thirza Cherry, glowing crimson scarlet; and Miss S. Carnegie, one of the leading Picotee varieties, were arranged by Mr. H. J. Jones, Ryecroft Nursery, Lewisham. Messrs. J. Peed & Sons, Roupell Park Nurseries, Norwood Road, S.E., brought forward a choice selection of named Pyrethrums and other hardy plants. Enothera rosea was here, also Dianthus neglectus, D. Lady Fitzharding, a pink variety, earlier than Early Blush, besides many other choice things.

A wonderful collection of Violas exhibited in bunches was sent by Messrs. Dobbie & Co., Rothesay, N.B. The varieties were arranged on a black velvet background, others being on exhibition boards. Amongst

the more showy varieties were William Haig, deep violet-blue; rosea pallida, lavender; Victoria, chestnut brown, black centre; Pembroke, yellow; and J. B. Riding, bright purplish mauve. Pansies, such as James Campbell, Lady Sybil, Tom Walters, Miss Neill, D. Russell, R. White, and Mavanreen were each splendid. They also staged Sweet Peas (silver Flora medal).

Messrs. F. Cant & Co., Braiswick Nursery, Colchester, had Roses, including such varieties as Lady Mary Fitzwilliam, Souvenir d'un Ami, Madame Cusin, Madame Bravy, &c. They also had Janet's Pride, a hybrid Sweet Brier; rmgosa fimbriata, Longworth Rambler, and Marquis of Salisbury. They also staged six magnificent blooms of Souvenir de President Carnot, palest blush, indeed almost white. Malmaison Carnations came from Messrs. Hugh Low & Co., Bushhill Park, Enfield. Lady Rose, deep rose pink, is one of the finest; but all the best varieties were staged.

A group of Streptocarpus of the multiflora type, in all imaginable and unimaginable colours, was exhibited by Lord Aldenham (gardener, Mr. E. Beckett), Elstree, Herts. The plants were a credit to these famed gardens. Mr. Beckett is a marvel. From Messrs. J. Cheal and Sons, Crawley, came a very interesting group of cut sprays of flowering shrubs and others remarkable for their coloured and handsome foliage. Mr. Geo. Prince, Longworth, Faringdon, Berks, exhibited Roses liberally. His Comtesse de Nadaillac in the centre were marvellously fine (silver-gilt Flora medal). Messrs. Kelway & Son, of Langport, staged Delphiniums and Pæonies. They were too high to be inspected with ease, but the group on the whole was extensive and magnificent. Lady Nina Balfour, Newton Don, Kelso, N.B., showed a small display of Malmaison Carnations. Messrs. J. Veitch & Sons, Ltd., filled the whole length of the table with their superb strain of Streptocarpus and Gloxinias.

Roses were exhibited splendidly by Messrs. Wm. Paul & Son, Waltham Cross, Herts. A grand display of the new H.-T. Tennyson was on view; the blooms were stronger and better than ever, proving this beautiful pale flesh-white variety to be one of the finest of recent introductions. The new Boadicea (Tea), of a rose-pink colour flushed lilac, and of splendid form in the bud, was also staged. Corallina was here again, and seems to be an extraordinary free bloomer. The firm also staged a large collection of decorative varieties, including W. A. Richardson, Carmine Pillar, Reine Olga de Wurtemberg, Euphrosyne, Aglaia, Papa Gontier, and very many others (silver Banksian medal).

Mr. Ed. Davis, West Dene Beech, Alton, Hants, showed a collection of Pansies and Violas. From Messrs. D. Prior & Son, Colchester, came Roses, and another fine collection of the same was sent by Messrs. B. R. Cant & Sons, The Old Rose Nurseries, Colchester. In the latter group were two new seedling varieties of great merit; one was named Othello, from Capt. Hayward, and A. K. Williams. This promises to be one of the best and most handsome H.P.'s yet sent out. The form is perfect, the blooms large with much substance, and the colour is bright crimson-cerise shaded deep lilac. Mrs. B. R. Cant, rose-pink, was also shown; it is free flowering, strong, and good (silver-gilt Flora medal).

Orchid Committee.

Present: H. J. Veitch, Esq. (in the chair); with Messrs. James O'Brien, de B. Crawshay, H. M. Pollett, H. Ballantine, E. Hill, J. Wilson-Potter, H. T. Pitt, W. H. Young, H. J. Chapman, Frank A. Rehder, H. Little, H. A. Tracy, and Jas. Douglas.

Mr. A. J. Keeling, High View Nursery, Cottingley, Bingley, sent half a dozen Orchids, including *Lælia tenebrosa*, *Masdevallia falcata*, *Miltonia stellata*, *Lælia Diana*, and *Dendrobium Victoria Regina*. Mr. W. E. Humphreys, gardener to A. H. Smee, Esq., The Grange, Hackbridge, exhibited the rarely shown *Pholidota obovata*. Mr. Thos. Stafford, gardener to F. Hardy, Esq., Tyntesfield, Ashton-on-Mersey, staged *Sophro-Cattleya George Hardy*, a bigener from a cross between *Sophranites grandiflora* and *Cattleya Aclandiae*. The same grower showed *Cypripedium Lawrenceanum nigrum* and *C. Gowerianum magnificum*.

A few cut Orchid blooms were contributed by R. Young, Esq., Sefton Park, Liverpool; there were *Odontoglossum nævium majus* and *Cypripedium Ganymedes*. *Odontoglossum Lucasianum* was exhibited by Mr. Duncan, gardener to C. J. Lucas, Esq., Warnham Court, Horsham. Mr. J. Davis, gardener to J. Gurney Fowler, Esq., Glebelands, South Woodford, sent a plant of *Cypripedium callosum Sanderæ*. Mr. G. Whitelegge, gardener to J. Bradshaw, Esq., Southgate, showed *Lælio-Cattleya C. G. Roebling*, a delightfully fragrant bigener.

There was only one group of Orchids. This was arranged by Messrs. B. S. Williams & Son, Upper Holloway; the most prominent were *Lælio-Cattleyas Hippolyta*, *Edouard André*, and *Canhamiana*; *Lælias tenebrosa* and *cinnabarina*, *Anguloa Clowesi*, *Odontoglossum Pescatorei*, *Dendrobium Dalhousianum luteum*, *Oncidium curtum*, *Cypripedium superbiens*, and *C. Mastersianum*.

Certificates and Awards of Merit.

Asplenium trichomanes bipinnatum (C. T. Druery).—A dwarf form, whose character is given in the varietal name (award of merit).

Carnation Duchess of Roxburgh (J. Douglas).—A splendid yellow ground; the colour is purple and orange (award of merit).

Dictamnus caucasicus (A. Perry).—A grand form; the rosy hued large flowers are borne on very long spikes (award of merit).

Gloriosa lutea (M. Cox).—The flowers of this plant are pure yellow, and have quite the peculiarity of form common to the better known *Gloriosa superba* (award of merit).

Rose Lady Roberts (Messrs. F. Cant & Co.).—A Tea Rose of great promise; the form is excellent, and the colour reddish apricot (award of merit).

Sedum Kamschaticum fcl. var. (A. Perry).—This is a dwarf-growing yellow-flowered *Sedum*, with silver margined foliage (award of merit).

Sophro-Cattleya George Hardy, Tyntesfield variety (T. Stafford).—The colour of this bigener is very peculiar, the sepals and petals are reddish buff with crimson spots, the lip is maroon crimson (award of merit).

Strawberry The Laxton (Laxton Bros.).—This is a most excellent variety, that combines the several excellencies of the parents, Royal Sovereign and Sir Joseph Paxton (first-class certificate).

Medals Awarded.

Gold medal to Messrs. J. Veitch & Sons, Chelsea, for *Streptocarpus*, *Gloxinias*, *Solanums*, &c. Silver-gilt Flora to Messrs. F. Cant & Co., Colchester, for Roses; Messrs. B. R. Cant, Colchester, for Roses; Mr. Geo. Prince, Longworth, Berks, for Roses; Messrs. Kelway & Son, Langport, Somerset, for Pæonies and Delphiniums. Silver Flora to Messrs. D. Prior & Son, Colchester, for Roses; Messrs. Paul & Son, Cheshunt, for Pæonies and Roses; to Lord Aldenham, Elstree, for *Streptocarpus*; Messrs. R. H. Bath, Ltd., Wisbech, for Pæonies; Messrs. R. Wallace & Co., Colchester, for hardy flowers; Messrs. Dobbie & Co., Rothesay, for Pansies, Violas, and Sweet Peas. Silver Banksian to Mr. B. R. Davis of Yeovil, for Begonias; to Messrs. W. Spooner & Sons, Woking, for decorative Roses; Messrs. Hugh Low and Co., Enfield, for Carnations; Messrs. J. Cheal & Sons, Crawley, Sussex, for cut shrubs; Messrs. T. S. Ware, Ltd., Feltham, for hardy flowers; Mr. H. J. Jones, Lewisham, for Begonias and Ivy Pelargoniums; Messrs. Jackman & Son, Woking, for Roses; Messrs. Barr & Sons, King Street, Covent Garden, for hardy flowers; Lady Nina Balfour, Newton Don, Kelso, for Carnations; Messrs. J. Peed & Son, West Norwood, for cut herbaceous shrubs; Mr. H. B. May, Upper Edmonton, miscellaneous flowering exhibits. Silver-gilt bronze to Mr. A. Perry, Winchmore Hill, for hardy flowers.

York Gala.

THE forty-third year of the York Gala and Flower Show opened on Wednesday, 12th inst., and continued over the two following days. The morning of the first day opened dull and cool with slight showers, but by one o'clock the sun appeared and continued intermittently during the afternoon. On entering the spacious exhibition tent the magnificent specimen plants at once attracted notice. I think nowhere but at York can such gorgeously examples of floral beauty and foliage in specimen form be seen. From the four points of the compass came numerous exhibitors bringing splendid cultural examples, natives from nearly every part of the world. Roses were staged in quantities in grand form, and exclamations of surprise and wonder were freely expressed by the numerous admirers at seeing such a fine display so early in the season. I question if ever a finer lot of cut blooms have ever been seen at York before.

Taking this year's show as a whole it equals anything that has been seen in York in former years; the cut Rose classes certainly excel. The number of exhibitors this year far outnumbered those of last year. Referring again to the stove and greenhouse specimen plants, there were some fine examples of *Bougainvillea Sanderiana* and *glabra*, *Erica Cavendishi* and *ventricosa*; *Dracophyllum gracile*, *Anthuriums*, *Allamandas* and *Phænocomas*, were all very fine, besides others exhibited in the same classes. There were five competitors in the class for groups of miscellaneous plants, E. B. Faber, Esq., securing first honours. Quite a new feature at the show was a collection of fifteen varieties of hardy Water Lilies from Leopold de Rothschild, Esq., of Gunnersbury House. *Nymphaea alba candidissima* appears to be a vigorous grower, having large pure white flowers; *N. Marliacea chromatella*, flowers large and bright yellow; *N. William Falconer* seems to be the darkest variety, it has large ruby crimson flowers with a golden centre; the pretty *N. stellata* was also amongst them. Altogether it was a unique selection of those interesting hardy aquatics.

Exotic Ferns were fairly numerous, but called for no special remark. Carnations and Gloxinias were well shown, proving the increasing popularity of those useful flowers. Roses in pots were exhibited, but not in their best form, although a noticeable improvement was seen. Orchids were to the fore in great numbers, some extremely handsome *Lælio-Cattleya* hybrids being in evidence, besides many rare and beautiful varieties of *Cattleyas* proper; the popularity of these plants seems greater than ever. Competition in the Orchid classes was very keen. The Pelargonium tent did not show any decline in the quality of the specimens shown. There were the usual Show, Fancy, Hybrid Nosegay, double flowered, and double flowered Ivy-leaved varieties; most of them in excellent form. Begonias were not as good as they might have been, and not extensively shown; but some nice pyramidal Fuchsias were on view in the same tent, while fine, healthy, well-bloomed *Calceolarias* and *Liliums* were also staged. The cut Roses were quite a feature, the first prize for a class for seventy-two distinct

blooms being won by Messrs. B. R. Cant & Sons. For forty-eight distinct varieties the first prize went to the same exhibitor. All the Rose classes were keenly contested, and must have called for the keenest notice of the judges in deciding on their merits.

In the class for floral designs were some interesting examples, including harps of various patterns, umbrellas, cushions, horseshoes, hearts, and other devices, some of which were extremely well executed. Ornamental stands of flowers for dinner table and entrance halls brought forth several exhibitors; hand baskets of cut flowers were well contested. Bouquets were numerous, gracefully and beautifully got up objects, with the choicest of flowers. The first prize for two bridal bouquets was won by the celebrated firm of Messrs. Perkin & Son. It was composed of *Odontoglossum crispum* and *Paneratiums*. The first prize for two ball bouquets went to the same exhibitor. Messrs. W. Artindale & Son secured first for two hand bouquets. Pansies and Coleuses were not extensively shown. Some pretty table plants were exhibited.

Fruit of the choicest description was well represented for the time of year. The Grapes, Peaches, and Nectarines were certainly above the average. For the decorated table of ripe fruit the first prize went to Sir J. W. Pease; his fourteen dishes consisted of black and white Grapes, two Melons, Cherry Early Rivers, Pear Clapp's Favourite, Figs Turkey, Plums Count Althann's Gage and Transparent, Nectarine Early Rivers, Peach Gross Mignonne, Strawberry Royal Sovereign, Cherry Bigarreau de Schrecken; his centrepiece was gracefully filled with spikes of *Odontoglossum crispum* and *Heuchera sanguinea*; *Cattleya* and *Masdevallias* blooms were also used. Ninety points were awarded to this exhibit. The second prize went to Mr. C. E. Simpson with 67½ points, and third to Mr. J. Sinclair with 66 points. The latter exhibitor had some very fine fruit. In the class for eight kinds of fruits there was but one exhibitor. I think the committee has made a mistake in altering this class from six to eight dishes. I heard several exhibitors say they could have entered for six dishes but could not for the eight. In the class for four kinds the competition was keen, the first prize going to Lord Barnard. The classes for three of black Grapes and three of white were sharply contested. Two equal first prizes were awarded to A. Wilson, Esq., and Lady Beaumont respectively. Single dishes of Peaches, Nectarines, Figs, Melons, Strawberries, and Tomatoes were excellently shown. Several exhibitors entered and competed for Messrs. Sutton & Sons' and Messrs. Webb & Son's prizes offered for collections of vegetables.

Turning now to the trade exhibits, these were excellent and varied. Messrs. Rivers and Sons' fruit trees in pots were much admired. The two Cherry trees, one at either end of the group, Guigne d'Annonay and Belle d'Orleans, came in for a great share of admiration when I was present, loaded, as they were, with their luscious, bright, and tempting fruit. They certainly were splendid examples of skilful cultivation. Most conspicuous were their Nectarines in the varieties Cardinal and Early Rivers. Plums and Peaches were also good in size and colour. This proved to be quite a novel feature in the show.

Messrs. J. Veitch & Sons' (Ltd.) exhibits were grand and interesting. A table of *Kalanchoe flammea*, with a groundwork of Maidenhair Fern, had a pleasing effect. Adjoining this they had a table of their splendid strain of hybrid *Streptocarpus* arranged in columns. The white variety was simply splendid, but all were good. They also set up one of the prettiest lots of *Gloxinias* I think I ever saw, every plant seemed perfect. I have seen larger foliage and flowers, but for quality I think they have not been surpassed. This firm also sent some charming hybrid Orchids.

Messrs. Webb & Son of Stourbridge also had a nice batch of *Gloxinias*. Messrs. Cutbush & Sons put up a fine group of flowering and foliage plants; *Eremurus himalaicus* was particularly fine. Messrs. R. Smith & Co. put up a beautiful group of stove, greenhouse, and hardy plants, making a choice exhibit. From Messrs. B. R. Cant and Son came a nice collection of garden Roses; and Mr. R. Sydenham sent a collection of Sweet Peas; Mr. Brownhill a nice collection of *Caotns Dahlias*.

From Messrs. Geo. Cooling & Son came an interesting and much admired collection of cut garden and old-fashioned Roses. From Messrs. Charlesworth & Co. came some excellent things. The well-known firm of Messrs. Dicksons of Chester had an admirably fine collection of hardy cut blooms.

A similar but splendid collection came also from Messrs. Clibran and Son; they also showed a useful bedding *Lobelia* called Mrs. Clibran.

Mr. F. C. Edwards of Leeds showed group of Carnations, Crotons, and Caladiums; Mr. W. L. Pattison a stand of Pansies and Violas; Mr. J. Ward alpine and rock plants in a rockery. Messrs. Peed & Sons sent a neatly arranged group of magnificently flowered *Gloxinias*; a grand strain. Messrs. Walshaw & Son showed a group of Cannas, the only lot in the show. Messrs. W. Edwards & Son showed again their useful table ware and decorations. Messrs. Geo. Boyes & Co. showed their new Carnation Earl Roberts; unfortunately it is scentless.—E.

For a group of miscellaneous plants, in or out of bloom, arranged for effect, and occupying a space not exceeding 300 square feet.—First, Mr. E. B. Faber, Harrogate; second, Mr. J. S. Sharpe, Huddersfield; third, Mr. W. Vause, Leamington. For twelve stove or greenhouse plants in bloom (Orchids excluded).—First, Mr. J. Cypher, Cheltenham; second, Mr. W. Vause; third, Col. Harrison-Broadley, Welton. Six stove or greenhouse plants in bloom, distinct (Orchids

excluded).—First, Mr. J. Cypher; second, Mr. W. Vause. Three stove or greenhouse plants in bloom, distinct (Orchids excluded).—First, Mr. J. Cypher; second, Messrs. R. Simpson & Son, Selby; third, Mr. W. Vause. Specimen stove plant in bloom.—First, Mr. W. Vause. Specimen greenhouse plant in bloom.—First, Mr. W. Vause; second, Mr. J. Cypher; third, Col. Harrison-Broadley. Six ornamental fine-foliage or variegated plants, to include two Crotons.—First, Mr. J. Cypher; second, Mr. W. Vause; third, Messrs. R. Simpson & Son. Specimen *Azalea* or *Rhododendron*.—First, Mr. J. Cypher; second, Col. Harrison-Broadley. Three Crotons, distinct.—First, Messrs. R. Simpson & Son; second, Mr. E. B. Faber. Specimen Croton.—First, Messrs. R. Simpson & Son. Specimen Cape Heath.—First, Mr. J. Cypher; second, Mr. W. Vause. Six Coleuses, distinct.—First, Mr. G. Lee; second, Mr. R. Lawson; third, Marquess of Ripon. Twenty alpine and herbaceous plants, not more than two of one variety.—First, Mr. S. Harcastle, Bishop Wilton.

Six exotic Ferns, distinct.—First, Rev. G. Yeats, York; second, Messrs. R. Simpson & Son. Three exotic Ferns, distinct.—First, Rev. G. Yeats; second, Mrs. Tetley, Leeds. Specimen exotic Fern.—First, Rev. G. Yeats. Ten hardy Ferns, distinct.—First, Mr. T. Nicholson, York; second, Messrs. R. Simpson & Son; third, Mr. J. Jackson. Six hardy Ferns, distinct.—First, Mr. T. Nicholson; second, Messrs. R. Simpson & Son; third, Rev. G. Yeats. Carnations in bloom, not less than fifty pots.—First, Mr. A. Wilson, Hull; second, Mr. F. B. Grotrian, Wetherby; third, Messrs. Walshaw & Sons, Scarborough; fourth, Mr. E. B. Faber. Eight table plants, in or out of bloom, for dinner-table decoration.—First, Sir J. W. Pease, Guisborough; second, Mr. J. B. Oldham, Easingwold; third, Messrs. W. Artindale & Son, Sheffield. For a group of *Gloxinias*, in bloom.—First, Messrs. R. Simpson & Son; second, the Rev. G. Yeats; third, Mr. W. T. Owbridge, Hull. Eight *Gloxinias*.—First, Mr. T. M. Lambert; second, Mr. T. F. Wood, York.

For Roses, in bloom, in pots, grouped.—1, Mr. J. D. Hutchinson, Kirbymoorside; second, Mr. H. Pybus; third, Messrs. W. Jackson & Co. Six distinct Roses, in bloom, in pots.—1, Mr. H. Pybus, Leeds; second, Messrs. W. Jackson & Co.; third, Mrs. Tetley. Four distinct Roses, in bloom, in pots.—First, Mr. H. Pybus; second, Mrs. Tetley; third, Messrs. W. Jackson & Co., Bedale.

Mr. Jas. Cypher was first for a table of Orchids, 12 feet by 5 feet, arranged for effect; second, Mr. John Robson. Ten Orchids in bloom, distinct.—First, Mr. Jas. Cypher; second, Mr. John Robson; third, Mr. W. P. Burkinshaw. Six Orchids, in bloom, distinct.—First, Mr. W. P. Burkinshaw, Hessle; second, Mr. Jas. Cypher; third, Mr. J. Robson. Three Orchids, in bloom, distinct.—First, Mr. W. P. Burkinshaw; second, Mr. Jas. Cypher; third, Mr. John Robson. Six Orchids, in bloom, new or rare specimens, made up plants not allowed in this class, amateurs.—1, Mr. W. P. Burkinshaw.

Twelve Show Pelargoniums, distinct.—First, Mrs. Tetley; third, Mr. J. Bellerby, York. Six Show Pelargoniums, distinct.—First, Mrs. Tetley; second, Mr. J. E. Oldham. Three Show Pelargoniums, distinct.—First, Mrs. Tetley; second, Mr. J. B. Oldham. Group of Show Pelargoniums, in pots.—First, Mrs. Tetley. Group of not less than eight Fancy Pelargoniums.—First, Mrs. Tetley; second, Mr. J. Bellerby. Twelve Zonal, Nosegay, or Hybrid Nosegay Pelargoniums, distinct, in bloom.—First, Mrs. Tetley; second, Mr. H. Pybus. Six Zonal, Nosegay, or Hybrid Nosegay Pelargoniums, distinct, in bloom.—First, Mrs. Tetley; second, Mr. H. Pybus. Three Zonal, Nosegay, or Hybrid Nosegay Pelargoniums, distinct, in bloom.—First, Mrs. Tetley; second, Mr. H. Pybus; third, Mr. J. Clarke. Nine double-flowered Pelargoniums, distinct.—First, Mrs. Tetley; second, Messrs. R. Simpson and Son; third, Mr. J. W. Clarke. Three double-flowered Pelargoniums, distinct.—First, Mr. H. Pybus; second, Mr. G. Lee; third, Messrs. R. Simpson & Son. Six double-flowered Ivy-leaf Pelargoniums, distinct.—First, Mrs. Tetley; second, Mr. H. Pybus; third, Mr. J. W. Clarke. Three double-flowered Ivy-leaf Pelargoniums, distinct.—First, Mrs. Tetley; second, Mr. H. Pybus; third, Mr. J. W. Clarke. Group of *Tuberous Begonias*, in flower, arranged for effect.—First, Mr. W. T. Owbridge; second, Messrs. R. Simpson & Son; third, Miss Wharton, York.

Cut Flowers.—Messrs. B. R. Cant & Sons, Colchester, were first for seventy-two Roses, single blooms, not less than thirty-six varieties; second, Messrs. Harkness & Son, Bedale; third, Mr. G. Monnt, Canterbury. Forty distinct varieties of Roses, single blooms.—First, Messrs. B. R. Cant & Sons; second, Messrs. Harkness & Son; third, Messrs. J. Townsend & Sons, Worcester. Thirty-six distinct Roses, single blooms.—First, Mr. G. Prince, Longworth; second, Messrs. B. R. Cant and Sons; third, Messrs. J. Townsend & Sons. Twenty-four distinct Roses, single blooms.—First, Mr. G. Prince; second, Messrs. B. R. Cant & Sons; third, Messrs. J. Townsend & Sons. Eighteen distinct Roses, single blooms.—First, Mr. G. Prince; second, Messrs. B. R. Cant and Sons; third, Messrs. G. Cooling & Son, Bath. Twelve white and yellow Roses, not less than six varieties.—First, Mr. G. Prince; second, Messrs. B. R. Cant & Sons; third, Messrs. Harkness & Son. Eighteen distinct Roses, single blooms, amateurs.—First, Mr. W. Hutchinson; second, Mr. R. Park; third, Mrs. Tetley. Twelve distinct Roses, single blooms, amateurs.—First, Mr. W. Hutchinson; second, Mr. G. Moulos; third, Mr. R. Park, Bedale. Twelve Carnations or Picotees.—First, Sir J. W. Pease, Bart., M.P.; second, Mr. W. H. Battie-Wrightson, Doncaster. Twelve bunches of stove and greenhouse cut flowers, distinct.—First, Sir J. W. Pease, Bart., M.P.; second, Mr. W. H. Battie-Wrightson; third, Mr. J. D. Ellis, Worksop. Twelve bunches of stove

and greenhouse cut flowers, distinct (Orchids excluded).—First, Sir J. W. Pease, Bart., M.P.; second, Mr. W. H. Battie-Wrightson. eighteen bunches hardy border flowers, not less than nine distinct.—First, Messrs. Harkness & Son; second, Messrs. G. Gibson & Co., Leeming Bar; third, Sir J. W. Pease, Bart., M.P.; fourth, Mr. G. Cottam. Twelve bunches hardy border flowers, distinct.—First, Messrs. Harkness & Son; second, Sir J. W. Pease, Bart., M.P.; third, Messrs. G. Gibson & Co. Hardy cut flowers.—First, Messrs. Harkness and Son; second, Messrs. G. Gibson & Co.; third, Mr. W. Hutchinson, Kirbymoorside. Floral designs were effective, the chief exhibitors being Messrs. Perkins & Son, Coventry; Mr. C. E. Simpson, Scarborough; and Mr. J. Summers, Sunderland. Others in this section included Mrs. M. Hodgkins, West Didsbury, for a group of flowers for the decoration of dining table; second, Mr. G. Webster; third, Mr. J. Summers. Ornamental stand of flowers and foliage for entrance hall or staircase.—First, Mr. J. Summers; second, Mr. G. Cottam; third, Rev. G. Yeats. Hand basket of cut flowers.—First, Messrs. W. Artindale & Son; second, Messrs. Perkins & Son; third, Mr. W. Vanse. Hand basket of cut flowers, Orchids excluded.—First, Messrs. Perkins and Son; second, Messrs. W. Artindale & Son; third, Mr. W. Vanse. Two bridal bouquets.—First, Messrs. Perkins & Son; second, Messrs. W. Artindale & Son; third, Mr. J. Summers. Two ball bouquets.—First, Messrs. Perkins & Son; second, Messrs. W. Artindale & Son; third, Mr. J. Summers; extra third, Mr. J. Kirk, Stockport. Two hand bouquets.—First, Messrs. Artindale & Son; second, Mr. J. Kirk; third, Messrs. Perkins & Son; extra third, Mr. J. Summers. Single bouquet.—First, Messrs. Perkins & Son; second, Messrs. W. Artindale & Son; third, Mr. J. Kirk.

For forty-eight Fancy Pansies, dissimilar.—First, Mr. J. Smellie, Glasgow; second, Mr. I. Ramsden, Halifax. Twenty-four Fancy Pansies, dissimilar.—First, Mr. J. Smellie; second, Mr. I. Ramsden. Twenty-four Show Pansies, dissimilar.—First, Mr. J. Smellie; second, Mr. I. Ramsden.

Fruit and Vegetables.—Sir J. W. Pease, Bart. (gardener, Mr. J. McIndoe) Hutton Hall, gained the first prize for a decorated table of fruit. The varieties were Black Hamburgh and Muscat of Alexandria Grapes (11½ points); Cherries, Early Rivers and Bigarreau de Schreken (9½ points); Figs, Brown Turkey (5½ points); Nectarines, Early Rivers (5 points); Peaches, Early Alfred and Grosse Mignonne (10 points); Plums, Early Transparent Gage and Count Althann's Gage (10½ points); Melons, Best of All and Hutton Hall Green Flesh (10 points); Strawberry Royal Sovereign (5 points); Pear Clapp's Favourite (5 points); 6 points were awarded for beauty of flower and foliage; for harmonious blending of colour 6 points; making a total of 90. Mr. C. E. Simpson came second; and Mr. J. Sinclair, York, third. For a collection of fruits, four kinds, excluding Pine.—First, Lord Barnard; second, Earl of Derby; third, Sir J. W. Pease, Bart., M.P. Pine Apple.—First, Exor. of Mr. J. Corbett, Droitwich; second, Lord Barnard. Three bunches Black Hamburgh Grapes.—First, Mr. A. Wilson; second, Earl of Lonsborough; third, Lord Barnard. Three bunches of white Grapes.—First, Lady Beaumont, Carlton Towers; second, Lord Barnard; third, Sir J. Pease, Bart., M.P. Six Peaches.—First, Earl of Feversham; second, Mr. J. D. Ellis; third, Mr. W. Sheepshanks. Six Nectarines.—First, Earl of Derby; second, Mr. J. Summers; third, Sir G. Meyrick, Bart.; fourth, Earl of Lonsborough. Scarlet-fleshed Melon.—First, Earl of Lonsborough; second, Lord St. Oswald; third, Earl of Derby. Green-fleshed Melon.—First, Earl of Lonsborough; second, Colonel F. C. T. Gascoigne; third, Colonel Harrison-Broadley. White-fleshed Melon.—First, Mr. J. Summers; second, Mr. H. Thellusson; third, Earl of Lonsborough. Six Figs.—First, Mr. A. Wilson; second, Marquis of Ripon; third, Earl of Feversham. Cherries.—No first; second, Earl of Lonsborough. Strawberries.—First, Earl of Derby; second, Mr. H. Thellusson; third, Mr. R. Stead. Twelve Tomatoes.—First, Mr. W. H. Battie-Wrightson; second, Earl of Lonsborough; third, Mrs. W. Upjohn. Prize offered by Messrs. Sutton & Sons—Vegetables, six distinct.—First Lord Aldenham; second, Sir J. W. Pease, Bart., M.P.; third, Earl of Lathom. Prizes offered by Messrs. Webb & Sons.—Vegetables, six distinct.—First, Lord Aldenham; second, Sir J. W. Pease, Bart., M.P.; third, Earl of Lathom.

The following exhibitors were awarded gold medals:—Messrs. R. Smith & Sons, for decorative plants and bunches of cut flowers; Messrs. Cutbush & Son, for stove and greenhouse plants; Messrs. Rivers and Son, for fruit trees in pots; Messrs. Perkins & Son, for best single exhibit of floral design; Messrs. Veitch & Sons, Chelsea, for Gloxinias and Kalanchoes.

Cambridge Horticultural, June 12th.

The summer show of this Society was held on the same date this year as last. The weather was cold, but remained fine throughout. The society has had a long period of existence, having been instituted so far back as 1824. At one time groups of plants were a special feature of the Cambridge Flower Show; now, however, these have been almost all dispersed. Beautiful collections of cut blooms are always to the fore, and on this last occasion the Roses were particularly attractive. Messrs. B. R. Cant & Sons of Colchester won for the thirty-six distinct varieties; Messrs. Prior & Son, Colchester, coming second, and Mr. George Prince third. Messrs. B. R. Cant & Sons were again first for twenty-four varieties, with Messrs. D. Prior & Son, and Messrs. Frank Cant & Co., Colchester, in this order. The latter led the way in

the class for twelve distinct Tea and Noisette Roses, followed respectively by Mr. G. Prince, and Messrs. B. R. Cant & Sons. It will thus be seen that the honours in the Rose classes were pretty evenly divided.

Plants were represented by groups of 100 superficial feet arranged for effect. Mr. P. L. Hudson beat Mr. W. Bond. For ten distinct Orchids in bloom Mr. P. L. Hudson was also awarded first prize.

Amongst the limited number of fruit and vegetable exhibitors the chief winners were Mr. H. G. Fen for fifty heads of Asparagus; Mr. A. Matthew for a basket of salad; Mr. W. A. Briscoe first for a collection of eight kinds of vegetables, and Mr. A. Matthew second. The former also won for a Melon, and Mr. A. Matthew for one bunch of Grapes. In the sections devoted to plants and cut flowers we noted as principal winners the names of Messrs. A. E. Bester, Dr. Sandys, W. Bond, P. L. Hudson, Hobday & Son, A. Matthew, J. Catling, W. Dobbs, F. W. Miller, A. Chater, and A. Collin Lunn.

Canterbury Gardeners'.

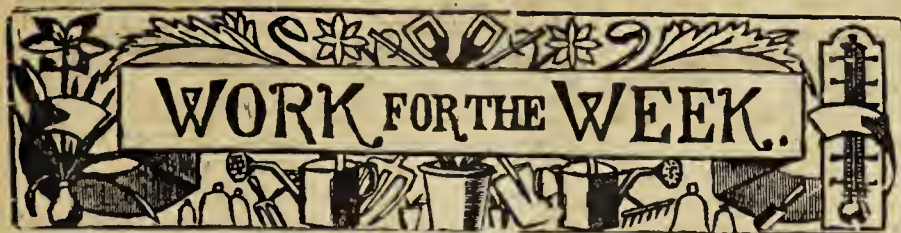
At the fortnightly meeting on Tuesday Mr. Fairweather was very highly commended for six Tomatoes and a plant of Malmaison Carnation, and obtained a certificate for six Peaches and a spray of Malmaison Carnation. Mr. Andrews was very highly commended for a basket of cut flowers, while Mr. Noble was highly commended for a white Cactus and two Malmaison Carnations. An excellent paper on "Carnations" was read by Mr. Sage of Bifrons.

National Amateur Gardeners' (Liverpool Branch).

A small flower show was held on Thursday, the 13th, in the Common Hall, Hackins Hey. The great event of the evening centred in the President's prize for cut flowers. Mr. Robins was the most successful, staging amongst other things some lovely Catherine Mermet Roses, whilst Miss Francis came a good second. Many sprays of Violas or Pansies were staged, so good that the judges divided the first and second prize between Mrs. McGregor and Mrs. Stevenson. The latter lady had a pretty Pelargonium for the President's prize, and Mrs. McGregor some choice cut Pelargoniums. Irises were lacking in variety, and Mrs. Stevenson succeeded in obtaining the prize. Mr. Dodd had a choice Adiantum for first prize Fern, and won a high percentage of points for a good Cattleya Mossiae. Mr. Robins was a good first with Fancy Pansies, Miss Hunter unfortunately being disqualified for a fine stand containing a highly marked Viola. The Zonal Pelargoniums from the latter lady were deserving of every credit. Several small oversights on the part of Mrs. Morris prevented her from getting a very high position. A lovely spray of Fern and Nerium Oleander from Miss Hunter, and one of Niphetos Roses from Mrs. Stevenson, tied for first honours. A very valuable lecture on the origin of cultivated plants was delivered by Miss Wood, who had evidently grasped the subject in a way that left nothing to be desired.—R. P. R.

Royal Institution.

MIMETIC INSECTS.—At the evening meeting, on Friday, June 7th, of the Royal Institution, which was the concluding one of the season, Professor R. Meldola gave a discourse on "Mimetic Insects." The Duke of Northumberland was in the chair, and among those present were Lord Gort, Lord Justice Stirling, Sir William Crookes, Sir James Crichton Browne, Mr. Alfred Russell Wallace, Professor Dewar, Professor E. B. Poulton, and Professor Silvanus P. Thompson. The lecturer began by pointing out that the more or less perfect resemblance exhibited by insects to their environment in form, colour, and habit, was an undoubted fact, whatever theories might be held as to its significance. The effect of such adaptation was, on the whole, concealment; it either helped the insect to escape its enemies, or to approach its prey undetected. Instances of such protective and aggressive colouring were to be found by any observant person in the country at the present time, and in certain extreme cases the resemblance was perfect down to the most minute details. The leaf-butterfly and the stick insect were familiar examples, and of British species various common caterpillars were modified in colour, form, and attitude, to resemble their food-plants. Allowing that such modifications are useful, there was no tenable explanation of them except that of Darwin and Wallace, and if natural selection was not evident in such cases, then it was not to be found in the natural kingdom. But some species, so far from adopting protective measures, seemed to flaunt their brilliant colourings, and this led Wallace to his theory of warning colours. He suggested that insects possessed of some inherent distasteful qualities might find it to their advantage to hang out, as it were, danger signals in the shape of gaudy colours, and much experimental evidence had accumulated in favour of the view that such species were more or less exempt from persecution. The latter part of the lecture was devoted to a discussion of cases of mimicry, in which some creatures seemed to assume a resemblance to others of quite different species—e.g., moths to hornets. Giving several illustrations in which different species seemed to have converged to a common type, the lecturer explained the Müllerian principle, that the larger the number of species moulded on a common type that had come to be regarded as inedible, the smaller the percentage of loss suffered by any particular species. The lecture was illustrated with a large number of slides, many of which were photographs in natural colours.—("The Times.")



Fruit Forcing.

Cucumbers.—The plants raised and planted early in the year will soon be showing signs of exhaustion, especially where grown on the high feeding and utmost capacity cropping principles; therefore it will be necessary to provide sturdy young plants, the seed being sown a month in advance of planting out, the plants being grown on in a position calculated to insure a short-jointed growth, yet without stunting and becoming cramped at the roots. If this be duly attended to, strong plants may be had that will come into bearing shortly after planting, there not being any material break in the supply of fruit. In the case of the plants being grown on the shallow trough principle, it is perhaps the best plan to grow the plants in shallow boxes, or, as they are called, trays, from which the plants can be transferred to the troughs when a yard or more in height, and with fruit showing, and even swelling, so that the supply of fruit is practically unbroken. Similar continuation may be had on the bed system, the plants being shifted into larger sized pots as required, and fruit had set and swelling when planted out. Where the plants have been infested by root pests, and the tops by malignant foes, the whole of the soil should be cleared out, and the structure thoroughly disinfected. For this purpose a solution of iron sulphate may be used, drenching the walls, troughs or beds, floor, everything. The iron sulphate solution may be prepared as follows:—Water 50 gallons, sulphuric acid 1 pint, iron sulphate 25 lbs. Pour the sulphuric acid upon the iron sulphate, then add by degrees the 50 gallons of water. A metal vessel must not be used for the preparation of this mixture, as it would be acted upon injuriously by the sulphuric acid, it being necessary to use a wooden vessel, such as that of a barrel, and the article kept from clothing, &c. The preparation destroys the resting spores of fungi, and the malignant animal organisms that are disposed to pass over from one crop to another; but it is all-important to remember that the drenching must be done whilst the house is quite empty, and some time before the new plants are introduced; the soil, where there is a suspicion of eelworm, or of resting spores, should be sterilised with Little's soluble phenyle, 1 fluid oz. to a gallon of water, about as much being given as in an ordinary watering. We have also found a mixture of equal parts air-slaked lime and fresh soot by measure, and half a pound of the mixture applied per square yard, the compost being spread out about 10 inches in depth, and the dressing mixed with the soil.

Vines.—*In Pots for Early Forcing.*—Cut-backs started early and shifted into the final pots in good time will have the growths completed, the canes being stopped when from 6 to 8 feet long, and the laterals kept pinched to one joint as made. The Vines should be freely ventilated, kept thoroughly clean, exposed to every ray of light, and duly but not excessively supplied with water and nourishment at the roots. The most desirable varieties for early forcing are White Frontignan, Foster's Seedling, Black Hamburgh, and Madresfield Court. Canes from early spring-rooted eyes should be stopped when from 6 to 8 feet long, pinching the laterals and sub-laterals at one joint as produced. Those intended for planting are also best treated in a similar manner, the object being to secure a fibrous root formation and stout, well-matured wood.

Vines Cleared of their Crops.—The foliage must be kept clean, syringing occasionally, and affording sufficient water or liquid manure to keep the soil properly moist, a light mulching of short spent material preventing the surface cracking, saving watering, and enticing the roots to remain at the top instead of descending into the border. Allow a moderate extension of the laterals, and admit air freely above 60°. If the Vines are weakly and not given to plump the buds well, apply a top-dressing of three parts dissolved bones and two parts double sulphate of potash and magnesia, applying 3 or 4 ozs. of the mixture per square yard, and point in lightly. It will tell as well in next season's crop, if not better, as in the present, in profiting the Vines. There is no fear of the wood not ripening, and the difficulty is to prevent over-ripening or premature fall of the foliage.

Houses of Ripe Grapes.—Slight shade, such as a single pilchard or double thickness of herring nets, is advisable over the roof-lights to prevent Black Hamburghs becoming red and Sweetwaters brown in colour. Moderate air moisture will not injure the Grapes if accompanied by judicious ventilation constantly. Keep the laterals fairly under, but a little extension will assist in the retention of the principal leaves, and upon these depends the storing of alimentary matter for maturing the buds and supporting growth from them for the next year's crops.

Grapes Ripening.—Small and many shanked berries are the characteristics of Grapes on Vines started at the beginning of the year. Nothing aggravates this so much as an excess of moisture and lack of sweet food. Where Grapes shank there is usually neither a deficiency of moisture nor of food, but neither is in a proper assimilable condition, there not being enough grit to keep the soil porous, air

entering and water percolating through it freely, nor sufficiently calcareous to render the elements available, and the whole in a sound, generous, healthy condition, being what is known as sodden and sour, and shanking, with other evils, especially bad colour, is the result. This greatest of evils in Grapes can only be overcome by an alteration of soil staple, or rectification of its liability to sourness by applications of lime, using air-slaked at the rate of a pound per square yard, and pointing in very lightly, or even leaving on the surface. The lime practically "eats up" the organic substances, corrects the tendency to sourness through the excess of organic acids, and furnishes the Vines with nitrate (by the action of nitrifying organisms), and sulphate (by the presence of sulphuric acid in the soil) of that substance. Admit air constantly when the Grapes begin to change colour, with sufficient heat in the pipes to maintain a night temperature of 65°, 70° to 75° by day, and 80° to 85° or 90° through the day from sun heat. Avoid an arid atmosphere, damping occasionally, and do not allow the border to become dry. Vines ripening heavy crops will be assisted in perfecting them and storing food for the future by an application of tepid liquid manure, or by a top-dressing of quickly acting fertiliser washed in, applying early in the day, and choosing bright weather, so that super-abundant moisture will be dissipated before evening. A light mulching of spent material will assist the Vines by securing uniform moisture and keeping the roots near the surface, whilst preventing cracking. It is a confined atmosphere, with defective root moisture during the swelling, that do mischief in Grapes cracking when ripening or ripe.

Late Grapes.—The final thinning will need to be completed as soon as possible, crowding the berries being even worse than over-thinning; but extremes are always bad, especially that of over-burdening the Vines. If there be any doubt of the crop being more than the Vines can finish well, by all means give the Vines the benefit by reducing the bunches. A pound of Grapes per foot run of rod is usually as many as ordinary Vines finish well, and unless this is effected the Grapes do not keep well. Thin so as to secure large and highly finished berries, Gros Colman requiring to have them an inch apart, or even more, whilst oval-berried varieties require a little less room, but all plenty, so that each berry will have ample room to swell to full size without wedging.

The Kitchen Garden.

Watering and Mulching Peas.—In order that Peas may produce well and continuously it is essential that the roots be kept in a moist condition. In order to do this a good mulching of manure down each side of the rows will materially assist in retaining the moisture applied. Clear pond or soft water is the best to afford when the soil is very dry, but when this has been given liberally something of a stronger character, such as liquid from the farmyard, may be given. A little artificial manure sprinkled along the rows and watered in will also prove beneficial. The mulching is of assistance in distributing the liquid gradually, which is likely to run away from the roots on dry soil.

Beans.—Beans that are not growing in a moist, fairly deep run will quickly lose many flowers, and fail to set fruit. After a prolonged period of dry weather showers fail to have much impression on the soil about the roots, hence it becomes desirable, especially with Scarlet Runners, to give moisture copiously to the roots at intervals to enable a good crop of pods to set. When the growths reach the top of the stakes, whether the latter are long or short, top them. This is also of assistance in helping the flowers to set well.

Brussels Sprouts.—The plants, which ought to be strengthened by previously pricking them out in a nursery bed, should be planted out finally now. These make a good succession to the earlier rows, which by this time ought to be well established and growing freely. Keep the ground between them clean and free from weeds.

Savoy.—The earliest varieties of Savoy may be planted out so as to form hearts early in autumn, deferring placing out the main crop until July. In the meantime, however, the latter should not be allowed to remain crowded in seed beds. Like other winter Greens, they are the better for transplanting, where each plant can have space to develop steadily and produce abundance of fibrous roots.

Broccoli.—The autumn and early winter varieties should be finally planted on very firm ground. The later sorts need not as yet be placed out finally, but they ought to remain in the seed or nursery beds without being crowded, and so that they can be lifted and planted readily as other crops are cleared off.

Cucumbers.—In houses the plants must be cleared of superfluous growths, yellow leaves, and young shoots tied out, stopping one or two joints beyond the fruit. Top-dress the roots with rich material, into which the young fibres will push and multiply. In frames the same process of constantly thinning-out and regulating growth is necessary, also stopping the shoots and liberally treating the roots. Frequently applying a layer of rich soil, in which some artificial manure is mixed, will prove most stimulating. Due supplies of water should be afforded the beds on the least dryness becoming apparent. Also supply weak liquid manure or soot water as a stimulant and feeder of the roots. Do not allow fruits to remain too long on the plants, they being exhausting. If young plants are available and vacant frames, place in the latter some good soil, and one plant under each light. Keep close, lightly shade, and sprinkle daily until established; afterwards regular supplies of air, moisture, and the ordinary treatment afforded to other frames. These will furnish a good late crop.

Tomatoes.—Planted out under glass, or in pots stood on stages in the greenhouse, frequent attention is necessary in supplying water, and to those bearing heavy crops liquid manure should be given, in addition to frequently top-dressing, to induce the emission of fresh surface fibres. The constant rubbing out of side shoots, as the leaders extend, is essential, keeping the plants mainly to one stem. Loam, manure, bone meal, and a little artificial manure form a good mixture, which should be applied at intervals, as new fibres are formed on the surface of the old dressing and are ready to enter more. Keep the outdoor Tomatoes duly supplied with moisture, trained to one stem, and superfluous shoots kept down.

Asparagus.—The sooner cutting ceases the better now, in order that good growth may be made. Clear the beds of weeds, and give a dressing of artificial manure and a thorough copious soaking of water or liquid manure.

Summer Lettuce.—Lettuce in growth will require plenty of water should the weather be dry. Cos varieties forming hearts may be tied up in dry weather to blanch. Succession beds should be sown preferably in drills, but if the soil is extremely dry water the drills well before sowing, and cover the seed with dry soil. It is best not to transplant now unless the weather is showery, the extreme heat making it difficult to establish young plants. The early plants which have bolted to seed may be pulled up, as they impoverish the ground.

Clydesdale Fruit Crops.

Strawberries promise well along the Vale of Clyde, and ripe fruit may probably be a fortnight earlier than last year. Owing to the "short" crop last season, the jam manufacturers are nearly sold out of their last year's stock, and are already more inclined to buy larger than formerly at a slight advance on last year's prices. Some few sales have taken place at £23 and £24 per ton, and it is generally expected that, with the continuance of the good weather, and the influx of visitors to the Glasgow Exhibition, prices will have an upward tendency on the local market. Gooseberries, while of an average crop, are not up to expectations. Prices for this class of fruit have fallen very low within recent years, but sales are taking place at an advance of £1 to £2 per ton compared with last year's prices. In some places the various varieties of Currants are a complete failure. Raspberries at the first appearance gave every promise of a good crop, but considerable damage has been done to the cane by the presence of the green fly, which has wrought much mischief. The strong east winds of the past week have done much to spoil the "setting" of the larger fruits, which showed in blossom indications of a plentiful crop. Plums, which were very good last year, have suffered most in this respect. The Tomato growing, which has become very popular in these districts within the last few years or so, shows every evidence of a good crop. Last season, what with the backward season and disease among the plants, many of the larger growers suffered a heavy pecuniary loss.

Phenological Observations.

JUNE 21ST TO 27TH.

PLANTS DEDICATED TO EACH DAY.

21 Fri.	Longest day.	Viper's Bngloss.
22 Sat.	Six-spot Burnet moth seen.	Canterbury Bells.
23 Sun.	Wheat flowers.	Lady's Slipper.
24 Mon.	Midsummer Day.	St. John's Wort.
25 Tu.	Common wasp abounds.	Sweet William.
26 Wed.	Privet hawk moth seen.	Blue Sowthistle.
7 Thr.	Cuckoo departs.	Perforated St. John's Wort.



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Ixiolirion montanum (B. A.).—We have thought your flower worthy of being illustrated, as certainly few spring or early summer flowers are

so superior in their brightness and grace. It belongs to the Narcissus and Amaryllis order (Amaryllidaceæ), and is bulbous. It is a native of Western Asia, and the flowers are bright lilac coloured. The variety named *I. tataricum* is even handsomer, for the flowers are deep, reverberating blue; it also has more slender stems. There are a number of species all suitable for the hardy flower border or rock garden. They prefer a warm, sunny position, and deep, well drained, rich sandy loam.

Pears Dropping Off (Irish Fruit Grower).

—The Pears are infested with the Pear scab fungus, *Fusicladium pirinum*, one of the most injurious of fungus parasites attacking the Pear, in many instances spoiling the entire crop, in addition to doing permanent injury to the trees. It affects the young fruit, even the blossoms, and often prevents setting, or if setting, the recently set fruit drops, as in your case. It, later on, gives rise to the well known scabbing and cracking of the Pears. The leaves and young shoots are also attacked. It first appears under the form of small, roundish, dark spots, which soon increase in size, and run into each other, forming large, irregularly shaped, blackish blotches, and when conditions are favourable for the growth of the parasite the leaves and fruit are killed while quite young; the dark coloured mycelium spreads in the leaf or fruit between the cuticle and the epidermis, the cuticle being eventually ruptured, and myriads of very short branches protrude, each bearing a conidium or spore at its tip. The disease is extended by means of these conidia or spores, and it is tided over the winter by means of the mycelium present in fallen fruit, an ascigerous form being produced on the diseased patches, which matures the following spring. The following method of preventing the disease is advised by Prof. Galloway:—

"Spray with Bordeaux mixture; first, just as the flower buds begin to open; second, when the petals of the flowers are falling; and third, when the fruit is the size of Peas or slightly larger. If the season be rainy a fourth treatment should be given twelve days after the third. Four ounces of Paris green added to each fifty gallons of the mixture at the time of the third spraying will hold the codling moth in check. The Paris green should first be made into a thin paste by adding a little water. This paste readily unites with the mixture, and does not decrease its value in any way." In this country, however, ordinary Bordeaux mixture is apt to scorch the foliage of Apple and Pear trees, especially when the leafage is young, hence it is necessary to dilute the mixture to a safe strength, say 1 lb. copper sulphate and 1 lb. freshly burned lime to 12½ gallons of water, though it is best to ascertain a safe strength by experiment, as the foliage varies in different seasons. It is also not advisable to use more than 2½ ozs. of Paris green, preferably procured in paste form, to 50 gallons of the dilute Bordeaux mixture. In the winter the trees should be sprayed with simple solution of sulphate of copper, 1 lb. to 25 galls. of water, applying in mild weather when the trees are dry and the buds quite dormant.



IXIOLIRION MONTANUM.

Seedling Vines not Fruiting (W. W.).—The cause of the canes not showing signs of fruit is the non-formation of bnohes in embryo in the bnds during last year, which could hardly be expected, they having grown 6 feet in length, and ripened fairly well. The canes should have been cut down to a couple of bnds each, and the most promising of the growths retained, rubbing the other off. The cane reserved ought to be trained near the glass, but not so close as to touch it with the leaves, and have ample room for development. Pinch the laterals at the first leaf, and the sub-laterals also to one joint as made. Stop the cane at 8 to 9 feet, and take forward the lateral pushing from the joint in place of the cane, and stop this at the third joint, afterwards pinching all growths to one leaf. Under ordinary cultural treatment the cane will be strong with well ripened wood and plump bnds, and being shortened to a good bnd immediately below the point of stopping, and the laterals being cut off close, it is likely fruit will show on some of the growths pushing next year. This, however, is not always the case, seedling Vines, as a rule, not usually bearing until the third or fourth year from sowing the seed. Surely there is some mistake in respect of parent of the seedlings being Alicante crossed with Ham Green Favourite Tomato, and also in the Grape berries having Tomato seed as well as the Grape "pips." This, if correct, is something more than a phenomenon, and altogether at variance with the natural order of reproduction. It is not unusual for the foliage to be quite distinct from the parent, seedling Vines varying considerably.

Brown Deposit on Bunches of Black Hamburg Grapes (Sigma).—The berries are affected by what is known as rust, and is the result of some injury to the cuticle, or skin, of the berries, giving them a rusty appearance. It is usually caused whilst the skin is young and tender, commonly about thinning time, and disfigures them even when ripe. Once it is produced, remedy is out of the question; only cutting out the affected berries is of any use. Various views have been put forward, and several opinions held, as to the cause of rust. The chief cause, in our experience, is a chill, the atmosphere of the house being heated by the sun on some bright sunny morning to a high degree, and then admitting air too freely, so as to induce rapid evaporation, a lowering of the temperature, and consequently a chill, or, in other words, a cold draught of air is induced, the cuticle of the berries is injured, hardened, and rust follows. Rust, however, may be due to other causes. One of the most common is steam from hot-water pipes, they being syringed when highly heated; hence rust occurs most in early houses, where a good deal of firing is required, and especially where sulphur has been applied to the pipes too early in order to destroy red spider. Sulphurous fumes, and even sulphides, are very injurious to the skin of Grapes, especially when the berries are young and tender, and later on there is danger of so injuring the cuticle as to prevent the proper swelling of the berries. Touching the berries with the hand, or even the hair of the head, will also produce rust. It is well, therefore, not to touch or handle the berries in any way, since they are so easily injured. Avoid cold draughts or currents of air, and also sulphur fumes, whilst the Grapes are young, then rust will seldom, if ever, occur, though we have known it to occur by using water containing iron.

Leaves Blistered (R. M. H.).—The leaves, Almond, Nectarine, or Peach, are attacked by the leaf onrl fungus, *Exoascus deformans*, which causes affected leaves to become curled, distorted, and thickened, and of a pale yellowish green, then rosy or purplish colour; finally the convex portions of the diseased leaves become covered with a very delicate whitish bloom, which represents the fruits of the fungus, burst through the cuticle and enabling the spores to be diffused. Oftentimes the young shoots are also swollen and distorted by the fungus, the mycelium being perennial in the branches, and each season passes into the leaf bnds, which consequently contain the mycelium of the fungus in their tissues when they expand the following spring. Infection of apparently healthy trees must necessarily arise from the presence of spores floating in the air and alighting on leaves or twigs. The disease is common to outdoor Peaches and Nectarines, and somewhat abundant this season on Almond trees, the affected leaves ultimately withering and falling prematurely. The disease is less abundant, and sometimes entirely absent in a genial spring, when the foliage quickly attains its full size without check, but it is rampant when the leaves have commenced growth under favourable auspices and are afterwards checked by a sudden fall in temperature. Warm, congenial weather completely foils the fungus, clean growth following after the weather becomes settled. Protection, therefore, is one of the best means of preventing attacks of the fungus, and where this is well provided and attended to fungus makes little, if any, progress. When, on the other hand, wall trees are not, or indifferently protected, blistered leaves and shoots are common in cold springs, especially after frosts and onting winds. Spraying with dilute Bordeaux mixture has been advised, but the foliage of Peaches and Nectarines is very susceptible to injury, hence it must be treated very carefully, and best left alone. The spraying, if done, should be just when the leaf buds are beginning to expand, and again after an interval of three weeks. This is intended as a safeguard against windborne spores inoculating the trees. The remedy is to cut off and destroy the affected shoots and leaves, but this must be done gradually, removing some of the worst first, and so on at intervals of a few days until the whole are removed and burned; then, with genial weather, the trees will make, other conditions being favourable, clean, healthy growth.

Names of Plants (G. A.).—1, *Tecoma jasminoides*; 2, *Alyssum saxatile citrinum*. (Hill). — 1, *Oncidium altissimum*; 2, *Brassia verrucosa*; 3, *Carex Brunnea variegata*; 4, next week; 5, *Nephrolepis cordifolia*; 6, *Polypodium anrenum var. areolatum*. (A. P.).—1, Probably *Spiraea bella*; 2, *Spiraea betulaefolia*; 3, *Clematis Fortunei* var.; 4, *Inula grandiflora*. (J. A.).—1, *Cattleya Mossiae*; 2, *Veronica Teuorium*; 3, *Tradescantia virginica*; 4, *Heuchera sanguinea*; 5, *Erigeron macranthus*; 6, *Saxifraga Maonabiana*. (S. P.).—1, *Saxifraga pyramidalis*; 2, *Veronica repens* var.; 3, *V. amethystina*; 4, *Lychnis viscaria*; 5, *Saxifraga taygetea*; 6, *Geranium sanguineum*; 7, *Helianthemum luteum*; 8, *Sedum rupestre*. (J. N.).—1, *Hibiscus syriacus*; 2, *Cissus discolor*; 3, *Mesembryanthemum Browni*; 4, *Fittonia gigantea*; (C. & Sons).—*Allium moly*. (J. T.).—1, *Jasminum humile*; 2, *Linnm nabonnense*; 3, *Acacia platyptera*; 4, *Mertensia sibirica*. (A. L. F.).—1, *Rhenm undulatum*; 2, *Centranthus ruber*; 3, *Dendrobinm Devonianum*; 4, *Linaria alpina*. (R. F.).—1, *Clintonia umbellata*; 2, *Rosa lutea*. (F.).—1, *Dianthus cæsius*; 2, probably *Crambe orientale*.

Covent Garden Market.—June 19th.

Average Wholesale Prices.—Fruit.

	s.	d.	s.	d.		s.	d.	s.	d.
Apples, Tasmanian, case	9	0	12	0	Lemons, Messinas, case	9	0	12	0
Apricots, 20s., 24s. ... box	1	0	1	3	„ Naples	18	0	24	0
Bananas	8	0	12	0	Melons, each	1	6	2	6
Figs, green, doz.	4	0	10	0	Oranges, case	15	0	35	0
Grapes, Hamburgh, lb. ...	1	6	2	6	Pines, St. Michael's, each	2	6	4	6
„ Muscat	3	0	4	0	Strawberries, lb. ...	0	4	1	0

Average Wholesale Prices.—Vegetables.

	s. d.	s. d.		s. d.	s. d.
Artichokes, green, doz. ...	2 0	to 3 0	Horseradish, bnch. ...	1 2	to 1 6
„ Jerusalem, sieve	1 6	0 0	Leeks, bunch	0 1½	0 2
Asparagus, English, 100	1 6	2 0	Lettuce, doz.	0 6	1 0
Batavia, doz.	2 0	0 0	Mushrooms, forced, lb. ...	0 8	0 9
Beans, French, lb.	0 9	10	Mustard and Cress, pnnt.	0 2	0 0
Beet, red, doz.	0 6	0 0	Parsley, doz. bnchs. ...	2 0	3 0
Broccoli, bush.	0 0	0 0	Peas, blue, per bus. ...	3 0	6 0
Cabbages, tally	1 6	3 0	Potatoes, cwt.	3 0	7 0
Carrots, new, doz. bnch.	4 0	6 0	„ New Jersey, cwt	8 0	9 0
Cauliflowers, doz.	5 0	6 0	Radishes, doz.	0 6	0 9
Chicory, Belgian, lb.	0 4	0 0	Rhubarb, doz.	1 0	1 3
Corn Salad, strike	1 0	1 3	Shallots, lb.	0 4	0 0
Cucumbers, doz.	2 6	4 0	Spinach, bush.	4 0	5 0
Endive, doz.	1 3	2 0	Tomatoes, English, lb. ...	0 6	0 8
Greens, bush.	1 0	1 6	Turnips, doz., new ...	6 0	8 0
Herbs, bunch	0 2	0 0	Watercress, doz.	0 6	0 8

Average Wholesale Prices.—Plants in Pots.

	s. d.	s. d.		s. d.	s. d.		
Acers, doz.	12	0 to 24	0	Fuchsias	5 0 to 6 0		
Aralias, doz.	5	0	12	0	Geraniums, scarlet, doz.	4 0	5 0
Araucaria, doz.	21	0	30	0	„ pink, doz.	4 0	6 0
Aspidistra, doz.	18	0	36	0	„ King of Denmark, doz.	5 0	6 0
Crotons, doz.	18	0	30	0	Hydrangea panicula, doz.	18 0	30 0
Dracæna, var., doz.	12	0	30	0	Hydrangeas, white, pink	9 0	12 0
Dracæna, viridis, doz. ...	9	0	18	0	Lycopodiums, doz.	3 0	4 0
Erica, various, doz.	18	0	36	0	Marguerite Daisy, doz....	6 0	12 0
Enonymus, var., doz. ...	6	0	18	0	Mignonette, doz.	6 0	8 0
Evergreens, var., doz. ...	4	0	18	0	Myrtles, doz.	6 0	9 0
Ferns, var., doz.	4	0	18	0	Palms, in var., doz. ...	15 0	30 0
Ferns, small, 100	10	0	16	0	„ specimens	21 0	63 0
Ficus elastica, doz.	9	0	12	0	Pelargoniums	6 0	8 0
Foliage plants, var., each	1	0	5 0		„ Ivy leaf	4 0	6 0

Average Wholesale Prices.—Cut Flowers.

	s. d.	s. d.		s. d.	s. d.
Arums, doz.	2	6 to 3	0	Maidenhair Fern, dozen	
Asparagus, Fern, bunch	1	6	2	bnchs.	4 0 to 6 0
Carnations, 12 blooms ...	1	0	1	Marguerites, white, doz.	
Cattleyas, doz....	6	0	9	bnches... ..	3 0 4 0
Cornflower, doz. bnchs....	1	0	1	„ yellow, doz. bnchs.	2 0 3 0
Eucharis, doz.	2	0	0	Mignonette, English, doz.	4 0 6 0
Freesia, doz. bnchs. ...	0	0	0	Odontoglossums	2 0 3 0
Gardenias, doz.	1	6	2	Roses, Niphetos, white,	
Geranium, scarlet, doz.				doz.	1 0 2 0
bnches... ..	4	0	0	„ pink, doz.	1 0 3 0
Gladioli, doz. bnchs. ...	6	0	9	„ yellow, doz. (Perles)...	1 0 1 6
Gypsophila, doz. bnchs.	3	0	5	„ red, doz.	0 6 1 0
Iceland Poppies, doz.bnchs	1	0	2	Smilax, bunch	3 0 6 0
Iris, Spanish, doz. bnchs.	6	0	8	Stephanotis, doz.	1 0 2 6
Lilium lancifolium album	2	0	3	Stock, white, doz. bnchs.	2 6 4 0
„ „ rubrum	3	0	5	Sweet Peas, white, doz.	
„ longiflorum... ..	1	6	2	bnches... ..	2 0 4 0
Lilac, white, bunch,	3	0	0	„ coloured, doz. bnchs.	2 0 4 0
Lily of the Valley, 12 bnchs	12	0	18	Tuberose, gross	4 0 0 0

Next Week's Events.

Friday, 21st.—Lecture on "Plant Cultivation in British Colonies," at Regents Park.

Wednesday, 26th.—N.R.S., Richmond, Surrey.

Thursday, 27th.—Colchester Rose and Horticultural Society's Show (three days)



The Shows.

THE round of county and local agricultural shows has got well into swing, and it is satisfactory to find that they are being attended with a greater measure of success than they obtained last year, which was such a disastrous one to many of them. It is to be hoped that the Royal Agricultural Society will have at Cardiff a similar experience, although, if entries are any criterion, the prospect is not encouraging, for they are smaller all round than they have been in any year since the show was last at Cardiff in 1872.

Very little is heard amongst farmers in the way of opinion as to the wisdom of having a permanent show yard, but those which are given are mostly unfavourable. The metropolis is easy of access, and farmers, like other people, are fond of a trip up to town; but socially there is a serious drawback, for most farmers, especially members of the society, whenever the show came into their own neighbourhood, made a point of entertaining friends from a distance, and these house parties were often the means of giving and receiving valuable farming knowledge and practice, quite possibly exceeding the benefit to be gained from the show itself.

The Future of British Wool.

As midsummer approaches, the home crop of wool begins to come on the market, and we have before us reports of some of the opening local markets. The prices quoted are depressing in the extreme, being from 5s. 3d. to 8s. per 14½ lbs., or from 4½d. to 6½d. per lb. Surely there must be some extraordinary reason to account for such a low range of prices. When Wheat first fell below 30s. we all thought the depression was only temporary; but alas! we were mistaken, and 28s. seems to be now the normal price. Are we to have the same experience in the case of wool? If we are to believe a special article on the subject lately published in the "Yorkshire Post," and evidently written by an expert on the subject, we may as well resign ourselves to the present level of prices. One paragraph in this article we think specially worthy of quotation. "Our home sheep farmers will have to devote more time and attention to the mutton side of the industry, and we think the time has arrived when their fleeces will have to be regarded as but a by-product, or as the hides of slaughtered cattle." This strongly endorses our oft-repeated contention, that first-class mutton is the only possible, or rather practicable, object in sheep breeding at the present day, and that although wool has never been really anything but a by-product, yet its importance in that capacity has dwindled to such a low point that for the present and immediate future at least it must be left out of consideration.

The same writer has evidently an idea that farmers will hold their wool, and decline to sell at these low prices, a course which he strongly advises them not to pursue, as he states that there is nothing either in trade conditions, supplies, or consumption to indicate any advance in the immediate future. The quantity of wool from Australia and the River Plate which competes with English wool in the home markets is certainly a very dominating one, being 262,000,000 lbs., as compared to 90,000,000 of English. Very little consideration is required to see that, under the present or similar depressing conditions, the locking up of the greater part of the English clip might have very little appreciable effect in increasing values. That farmers will hold much of their wool we do not believe. Too many are leading too much of a hand-to-mouth existence to be able to do so, and many others are wise enough to turn the nimble sixpence with as little delay as possible. A few here and there like to have a granary full of wool to talk about. We know some who have held wool for 2s. 6d. per lb., and would do it again. Alas! there are but few nowadays who can afford it.

Graziers' Difficulties.

Occupiers of grass farms, though they steer fairly clear of the labour troubles of their arable neighbours, have plenty of their own, if of a different nature. The most difficult matter, and one almost impossible to compass to perfection, is the stocking of grass with the most paying quantity of sheep or cattle. The high price of store cattle which has prevailed in recent years has made a hole into the grazier's profits, for rises in the price of beef have been both rare and of short duration. Stores were as dear as ever this spring, and the

farmer who was tempted, by good prospects of keeping, to buy almost to overstocking, is now, with bare and almost brown pastures, in a most unenviable position. His only chance of relief is to have some cattle fat enough for sale; if so, they must go at once, although they may promise a better return with more time, and make room for drafts from the fields which require relief the most. Hay is likely to be light, and there is very little old, so he will be loth to sacrifice a meadow, which had to be done in hundreds of cases in 1893. Selling anything but beef would mean a dead loss, for it is doubtful whether growing cattle are worth as much now as they were in April. Cow lying off in calf are most sought after, such as would come into profit from September 1st onwards. Fortunately there is plenty of water, and cake may be bought, though it is still above a normal level of price; but farmers have become very shy of buying cake and seeing little or no return for it, an experience which has been too frequent of late. A good big heap of Mangold would be invaluable to many grass farmers just now, whilst large quantities will be fed to pigs in the arable districts during the next two months.

Work on the Home Farm.

A good shower last night was no doubt very refreshing to the thirsty crops, but the effect is soon gone, whilst the barometer, after falling a little, is again steadily rising, so we suppose we must still wait for the desired rainfall. That matters are becoming serious there can be little doubt. We notice that an agricultural writer compares this season with that of 1868, as being similar in character, but we hardly think that 1901 has been so hot and dry. In 1868 there was a fine and forward plant of Wheat, and a favourable seed-time for Barley, both of which are lacking to the present season, and with a continuation of drouthy conditions there is little likelihood of this year's grain crops approaching those of 1868.

Clovers, Sainfoin, &c., have bloomed much too rapidly, and are much shorter than they should be; the grass reaper is busy at work, and the scent of new-mown hay is on every breeze. The crops will be a little better than last year owing to the thick plant, but far below the record which more growing weather might have brought about. Without further rain the hay crops must be even more disappointing, and with very few old ricks about there is every prospect of a boom in the hay market.

Turnip prospects vary very much; some pieces are doing well, having both germinated well and grown away from the fly, whilst in other cases these little insects have made bad work, and resowings will be common. Farmers wisely have continued drilling where the tilth has been good enough, although much seed may not grow until there has been a good rain. Meanwhile, having got the root crops in, they can at any rate be getting their Clover and hay safely in until the weather breaks.

Mangold grow well and are being side-hoed. Poor accounts reach us as to this crop from several quarters, many plots having come up patchily, whilst some have not grown at all. It will be a pity if the Mangold crop is a partial failure. For some purposes it can hardly be replaced; but as our annual forecast of the root crop generally is a favourable one, we think farmers need not be greatly alarmed as to the stock of food for next winter as regards roots, but the tightness in the supplies of dry food and litter is likely to be increased rather than relieved.

Another shower has just fallen, sufficient to bother the haymakers, but of no practical use to the crops.

Are Farm Implements Vehicles?—A case of considerable importance to agriculturists was heard at Bedale a few days ago. It appears that a farm servant, named Smithson, was charged under the North Riding bye-laws with driving a corn drill along the high road at Well after sunset. His master was charged at the same time with causing the said corn drill to be driven without a light on the same day. At the first hearing the magistrates could not agree as to the ruling of the law on the point, so an application was made to the Secretary of State, asking whether agricultural implements are, or are not, liable to carry lights; in other words, whether they are vehicles.

Wanted—A Seed-Testing Station.—An independent seed-testing station, under State control, is an institution which we in England are lacking. The advantages of it are apparent. At present, if there is any dispute between a seedsman and his customer, there is no court of appeal, such as a Government seed-testing station would supply. Seedsmen, too, would gladly take advantage of it themselves, as if they could advertise their seeds with a Government imprimatur stamped, so to speak, on the outside of them, they would at once gain their customers' confidence. The President of the Board of Agriculture is considering the advisability of establishing a seed station of this kind, and I only hope, says "W. C. S.," in "The Agricultural World," he will decide in favour of it. The best known seed station on the Continent is the one at Zurich, which is presided over by Dr. Stebler, and it is to him that British seedsmen are now obliged to send their seeds when they require independent testimony concerning them.

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trees, 1/10 gross; Wall Nails, same price as ordinary nails; Glazing Staples, 1/6 gross; Plant Pots, also Pans, 3/- cast any size (card. ford.); Pot Suspenders; Pot Crocks; Orchid Baskets; Garden Syringe; Spray Diffuser, for spraying insecticide, &c., complete, 2/6; Powder Diffuser, for diffusing powder on plants, filled, 1/-; Flower Grip Holders of all kinds; Greenhouse Shading, 9d. tins—if not satisfactory after trial money will be returned; Mushroom Spawn, very prolific, 1/- per bushel; Insecticide, 1/3 dozen boxes; Mealy Bug Destroyer, 7d. bottles; Horticultural Soap, 1½lb tins, 1/-; Powder Weed Killer, if not the best and cheapest after trial money will be returned, 1/6 tin, makes 16 to 50 gallons; Slug Killer Powder, certain destruction to slugs, &c., and a splendid fertiliser, from lb. tins, 9d.; Lawn Sand, kills all weeds and nourishes the Grass, from lb. tins, 9d.; Tobacco Powder, extra fine ground, from 9d. tins; Seed Germinator, 6d. boxes (lasts for years), no seed should be sown without a dressing of this; Fertiliser, perfect plant food, from lb. tins, 9d.; Manures, &c., &c. All carriage and package free. **SAMPLES GRATIS.**

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Journal of Horticulture.

THURSDAY, JUNE 27, 1901.

Wasted Vigour.



FROM various causes there is much wasted vigour going on in relation to the cultivation of certain kinds of fruit that might well be prevented. Too often those responsible scarcely appreciate the position, or, in other words, are not aware how much waste there is taking place, otherwise they would not be so careless in the matter. Take the

Grape Vine as a noteworthy instance. Why do those in charge so long defer—first, the thinning out of shoots that form, and, a little later, the topping of those reserved? It is a common occurrence to leave this important work till many of the more advanced shoots are 18 inches to 2 feet long, which means so much wasted vigour that ought to have been diverted elsewhere. No matter how carefully the ends of the rods are depressed, the shoots near the points are almost certain to make the most rapid progress, either from the first, or directly the rods are placed in their proper position. Not only ought the thinning out, or the reduction of the shoots to one or, at the most, to two at each spur in the case of the older rods, and to one only at each joint of strong young canes, to be done early, but the topping of laterals should commence directly this can be done with the finger and thumb. Topping these advanced shoots thus timely at once diverts the flow of sap to points where it is more wanted later, more weakly growths quickly gaining in strength, so that instead of a few laterals being extra strong and the rest much feebler, all are more or less on an equality.

There is far too much of the knife in evidence among Grape growers. There are times when it must be used, but it can be wholly dispensed with as far as the early stages of the Vine's growth is concerned. Allowing far more bunches or "shows" to remain on the laterals than it is intended to finally develop is also a waste of vigour. With a very little experience by way of a guide it can easily be determined which of the two or three

READERS are requested to send Notices of Gardening Appointments or Notes of Horticultural Interest, Intimations of Meetings, Queries, and all Articles for Publication, officially to "THE EDITOR," at 12, Mitre Court Chambers, Fleet Street, London, E.C., and to no other person and to no other address.

bunches that usually show on each strong lateral will best meet the requirements of the grower; and where is the sense of leaving them long enough to need the assistance of a knife to remove them? I go to the length of advising the very early removal of, or the reduction in size, of the shoulders, and advocate the retention of more bunches than are required only in the case of Muscats or other shy-setting varieties.

Following upon the early topping of laterals two leaves beyond the reserved bunch, we may expect a moderately strong break of sub-laterals, and these, again I say, should not be allowed to extend to the extent of requiring a knife to remove them. If they promise to be more in number than there is good room for, thin them out, stopping all the rest beyond the first leaf each break makes. Some growers advocate the practice of allowing sub-lateral growths to extend freely, the idea being that they materially assist in stimulating root action.

I doubt the value of this theory, having far more faith in the good work done by fewer, well-developed leaves. The loss of primary leaves is most unfortunate, and a much greater number of secondary leaves, as those formed by the sub-laterals may be termed, does not offer sufficient compensation. This remark applies with greatest force to young canes, whether these are produced by newly planted or older Vines. Allowing the laterals on these to grow to a great length before they are topped, in some instances not stopping them at all, means first a check to the swelling of stems, and the development of primary leaves, while later on, when the lateral wood does begin to assist in thickening the stems, this is usually followed by the dislocation of the primary leafstalks, or rather that part attached to the stem. How else are we to account for their flagging and dropping off prematurely? I have for many years past advocated topping young canes at about the height or length they are to be left when finally pruned, and each season proofs of the correctness of this practice are forthcoming. Not only ought they to be thus topped, but the laterals and sub-laterals should also be topped beyond the first leaf at each break. Under this treatment the primary leaves do their work well, the stems becoming large and woody—not sappy, as might be imagined—while the buds plump up, breaking strongly, each showing two or three bunches the following season.

Then, as to thinning out, first the bunches and afterwards the berries, I think there can be no two opinions as to the unwisdom of unduly delaying these operations. What can be a greater waste of vigour than deferring the final reduction of bunches till such times as the berries have either commenced or are on the point of commencing to colour? It is true many of us do not realise what a heavy crop of bunches have been left on the Vines till the colouring period is reached, but we pay dearly for our recklessness. Conserve the strength of the Vines, in other words prevent all undue waste of vigour, as much as we will, the Vines are only equal to perfecting a certain weight of fruit, and the greatest strain is put upon them during the stoning period. The final reduction of bunches ought therefore to take place before the stoning period, making a few exceptions in favour of known shy setters.

Much that has been advanced concerning the Grape Vine also applies to Peach and Nectarine trees. There should be no undue delay in thinning-out, first the flowers where very numerous on trees under glass, and then the shoots where crowded. After the crops are set a further thinning-out of shoots and fruit is desirable in many cases, the timely topping at the fifth leaf of those shoots to be left by way of nurses for the fruit naturally favouring the development of growths that are to be laid in for fruiting next season. All this may be done, only to mar the good effects generally by being too timid in thinning-out the crops finally. There seems to be an idea prevalent among gardeners that a certain amount of fruit will drop either during or soon after the stoning period, and in order to be on the safe side many more fruit are left to swell than it is intended to finally ripen. Surely it cannot be denied that this line of treatment actually tends to bring about a state of affairs we are most anxious to avoid. Personally I never hesitate to thin-out severely before the stoning period is entered upon. If any more fruit need removal after the final swelling is commenced, this is due to my failing to appreciate the extent of the crop when the fruit was comparatively small, and not because I was afraid to run the risk of having a lighter crop than desirable. If in the case of Grapes the maturation of the seed is a great strain on the Vines, what must it be during the stoning period of Peach and Nectarines, the trees in these instances having the extra strain of forming a woody covering for the kernels each fruit contains? If, then, we want a full crop of fully developed luscious fruit, we must prevent a waste of vigour in the direction of overcropping at the stoning period, which no amount of assistance at the roots seems equal to compensating for. It is towards the ripening period that the ill effects of too late thinning-out of the crops is most apparent, this not unfrequently ending in the production of much fruit only fit for cooking purposes. Much more might be said in this strain, but enough, I trust, has been advanced to induce inexperienced fruit growers to adopt more common sense treatment of Vines and fruit trees generally.—W. IGGULDEN.

Fruit Prospects.

AFTER the glut of fruit afforded by the gardens and orchards of last year the natural expectancy would be one of a lighter nature this year, and in some instances this may be a true forecast. On the whole, however, the prospective yield of the garden is a very favourable one, but rain is badly needed for some, and more particularly Strawberries. The spring has been one of the most remarkable in the almost entire absence of frost, the flowering period of all crops passing in and out without its damaging influence being felt. It is some years since there was such an entire absence, and to this is largely due the generally satisfactory state of the coming season's crops.

Strawberries without artificial irrigation suffered last season from the great drought, and some did not recover entirely from its effects by the action of the autumn and winter rains; others, again, are as vigorous and floriferous as can be wished, and should rain come quickly the late ones would give a full yield. The earlier plantations are smaller in berry, and much of the late-set fruit will never swell, even to preserving size, and thus the percentage of crop must be necessarily largely reduced. Young plants are doing very well where they were strawed over early to conserve the naturally stored moisture. Of these Laxton's Leader is maintaining its character, both for size and quantity of berries. It is even more conspicuous in its earliness to ripen. With this exception, other sorts grown, both midseason and late, seem resolved on taking an even race.

Raspberries I have never seen to look more promising, there being great freedom of fruit, and a vigorous sucker growth advancing. These are mulched early in order to conserve the winter's rain, as they, like Strawberries, are largely surface rooting. Red Currants do not promise so well as usual, and the Blacks are both small and thinly set in the bunches. Probably rain would mend these failings materially. Gooseberries, on the other hand, have been exceptionally well laden with berries above the average in size, and the caterpillar, which made its annual attempt to gain a footing, suffered a severe reverse from the cuckoo, who disposed of them in a few morning meals.

In the garden large bush Apple trees are well laden, so much so that some of the larger fruiting kinds need severe thinning to do them justice. Sorts that have a biennial fruiting tendency, such as Stirling Castle, Court Pendu Plat, and Cockle's Pippin, are this year very fully cropped. The growth of the trees, too, reveals a liking for summer weather, and seems but little concerned about the drought that is now pinching surface crops rather hard. This is in soil having a deep moist sand bed beneath it. In the grass orchards the prospects are not so good, and there seem to be hordes of caterpillars perforating the leaves of some trees and kinds. Others are free from insect life, and are bearing plentifully. The average yield, however, does not show a good prospect.

Pears, like Apples, are showing well for an even crop, and are swelling up well on bush trees; wall trees have thrown off a quantity that one time seemed safe, but on many trees there is ample left. Despite the chilling winds that have prevailed this spring, Cherries have given much less trouble than usual in dealing with black fly, a circumstance scarcely compatible with former theories. The result of this generally is heavier crops, too heavy at present, and Morellos in particular. Peaches and Nectarines did not bear so well these spring failings, but have shown in their sensitive foliage a good deal of curl and blister. Green aphids, too, took advantage of them, but, thanks to quassia extract, they were easily dealt with by means of the indispensable Abol syringe. The crop of Peaches promise to be a full one, and the growth of the trees appreciate the change of wind and weather.

Some of the Plums are strictly moderate, others overcropped, but the latter condition in garden trees is easily remedied in that the thinnings can be usefully applied to culinary purposes. In standard trees this is not so easy, nor will the state of the crop on standard trees call for such attention, where last year the yield was so heavy. They need, and seem to take for themselves, a rest to recoup after the heavy burden of last season. Apricots, like Plums, are lighter than last year, though there is a fair average promised, and the lesser numbers should insure finer fruit. Medlars and Quinces flowered freely, and Nuts and Filberts promise well.

Absence of rain is the common complaint of gardeners, and at the time of writing the prospects are not more assuring than it has been for a month past. Up to the end of May we are over 2 inches short of last year's total for the same period, though the fall in May was quite up to the average by measure. Searching winds and hot sun, however, had a counteracting influence when jointly attending a lengthened drought. Judging by the quantity of queen wasps seen, there is trouble in prospect for the fruit grower this year.—W. S., Wilts.

*Phalænopsis violacea.*

— THOUGH one of the small-flowered species of this beautiful genus, *P. violacea* possesses considerable attractions for culture in baskets, for its violet purple-tinted flowers are produced very freely, the neat

P. violacea Schröderi, and the Floral Committee awarded a first-class certificate for it. It is distinguished from the typical form by the flowers being of a uniform bright purplish tint, the petals not being whitish at the points as in the species. Another pretty variety, *P. v. Murtoniana*, is also known, a yellow hue being largely present in the blooms.

Cattleya Aclandiae.

Both in its flowers and growth this fine *Cattleya* is totally distinct from all others, and only the fact that its culture involves rather more difficulty than most species prevents its becoming very popular. In some instances this is undoubtedly due to faulty methods, a very frequent mistake being to overload the roots with compost. The plan I have found most successful is to place the plants on trellised blocks



PHALÆNOPSIS VIOLACEA.

Bright green leaves and dwarf habit also being additional recommendations. In shape and size the flowers are rather suggestive of *P. Luddemanniana*, though they have not the distinctive markings of that species, the sepals and petals being oval in form, whitish towards the tips, but deep violet purple at the base, the column being of a similar tint. They are borne several together on short racemes, but the latter are produced so freely that the plant has a very pleasing appearance when grown in a basket suspended from the roof of the Orchid house. It was introduced about forty years ago, but was only certificated in the year 1881, when shown by Messrs. J. Veitch and Sons of Chelsea at a meeting of the Royal Horticultural Society in June. A very distinct and beautiful variety was exhibited at a meeting of the above Society in August, 1882, by Mr. Ballantine, gardener to Baron Schröder, The Dell, Egham. This was named

of teak, and to allow only a thin surfacing of peat and moss around the plant, increasing this a little as the young leads push out. I have grown it on bare blocks, and it has done very well, but the plants have always been smaller and less floriferous than when the roots have a little compost to run in. Only avoid anything approaching closeness, as if once the roots are surfeited they decay, and the plant will be lost. Regarding the atmospheric treatment, the plants like plenty of heat and moisture, but this must be tempered by the admission of plenty of fresh air and light, or the growths will be soft and easily checked by slight fluctuations. It is well to keep it to its proper annual routine of growth, flowering, and rest, if possible; but with some specimens this will be found difficult, owing to their habit of starting new growths from the base of the last matured pseudo-bulb while this is flowering.—H. R. R.



Roses in the Open Air; Treat them Well.

THOSE who have a deep and rather stiff, loamy soil, can usually grow fine Roses provided they pay due attention to liberal manuring and other details of culture, but there are hosts of gardeners who desire to produce abundance of good flowers and yet have a most unsuitable soil to deal with. Such, however, need not despair, for although it is easier to secure good results when the soil is favourable, it is nevertheless a fact that good Roses may, with proper management, be grown on almost any soil. It is simply a matter of taking enough trouble, and using ordinary intelligence in carrying out the various details of culture. Those who have a light porous soil to deal with have this year found it necessary to give greater attention to watering and feeding than usual, for the drought set in early, and "starved" Rose trees have of late looked anything but flourishing, even when they were free from insects. On poor soils the man who manures heavily in winter finds out the advantage of such a practice in seasons like the present. When dwarfs are grown in beds or borders they ought to be lifted at least once in four years, and have the soil trenched and manured heavily beneath as well as on the surface. Some cultivators object to the practice of burying the manure deeply, because, they affirm, that it causes the roots to go down deeply instead of working freely near the surface. In practice, however, I find this theory can be disregarded; for although some roots do go down deeply in the soil after the manure, yet, with good surface culture, there is usually abundance near the surface too, and I maintain that we want both surface and deep roots, as in dry seasons the advantage of a deep root run is apparent to all close observers.

It has been my lot to grow large numbers of Rose trees as bushes, standards, and climbers, on a light and hungry soil, and I have always found the practice of burying the manure deeply, as well as using it freely on the surface, to be a sound and commendable one. In addition to such feeding, it is necessary to do something more at this season if fine results are to be secured. Those who have plenty of liquid manure at disposal, and are able to spare the labour to apply it to the Rose beds, need not fear hot weather or absence of rain, as under such conditions flowers of high colour are produced. It is not everyone, however, who can give such attention; but in such instances a heavy mulching of manure will benefit the plants immensely. Some noted Rose growers who hail from the north, in hot seasons apply a coating fully 9 inches in thickness, and the results justify the proceeding. It is, however, never wise to give so heavy a dressing too early in the season, as the soil is prevented from being warmed by sunshine; wait till warm settled weather occurs, and then mulch to conserve moisture, as well as to supply nutriment.

It is an undoubted fact that outdoor Roses which are liberally treated seldom suffer much from the attacks of diseases or insect pests; but when allowed to grow in impoverished soil, the approach of dry, warm weather is the danger signal which precedes bad attacks of mildew and hosts of green fly. The simplest and best means of getting rid of the latter pest is to boil 2 ozs. of softsoap and a similar weight of quassia chips in a gallon of water, and syringe on the plants when cool. This solution will kill every fly it touches, and if a handful of flowers of sulphur is added mildew will also quickly disappear.

Artificial manure is of great value to the Rose grower, fish guano being one of the best to apply. If this is used as soon as the flower buds have formed, and is watered in, it gives size and substance to the flowers. Soot scattered on the soil during showery weather, or given in a liquid state, is of great benefit to Roses of all descriptions, and many a famished bush might be brought into perfect health and vigour by the use of soot alone.

In connection with mulching, I should previously have pointed out that in many instances there is an objection to placing manure on the surface of the beds, when everything in the garden is required to look trim and neat; but this objection may be easily overcome by covering it with a thin layer of cocoa-nut fibre, which gives a finish which should satisfy the greatest advocate of trimness. After all, the main point the Rose grower should bear in mind is that the "coy queen" delights in high feeding; treat her well in this respect, and she will repay the labour a hundredfold.—H. D.

Roses in Pots.

HAVING read the directions respecting this method of Rose culture that have appeared in the Journal from time to time, I should like

to give my experience, gained in a Rose nursery where some of the magnificent specimens that have been exhibited were grown. The trade Roses are grown in the manner I will describe, and which I believe few private growers are acquainted with.

Most of the instructions we read on this subject are somewhat as follows—"Pot before flowering in loam, a little decayed dung, and some bone dust; then after flowering plunge the plants in ashes out of doors to ripen the wood," to which I add, "and get red spider." My instructions are, Pot the Roses after flowering, carefully picking some of the old soil from the ball with a pointed stick. If they require a larger pot, let it be only one size larger. Roses do not like a big shift. The soil should consist of good fibry loam (not such as I used instead of better when a foreman, which was clay and leaf soil), one barrowful, decayed manure one barrowful, road or river sand half a barrowful, a 32-sized potful of Clay's fertiliser, and one of soot; if a few small crocks or pieces of charcoal are added so much the better. Pot the Hybrid Perpetuals first, and for every barrowload of soil left add a third of a barrowful of chopped peat for the Teas.

Pot firmly, and stand the plants in a house or pit (mine is a pit), water them three or four times to thoroughly soak the soil, and be sure they are dry before they are watered again. Keep them close and shaded for a fortnight or three weeks, syringing them twice a day; then gradually discontinue the shade till they will bear the full sun, always increasing the air with the reduction of shade, but close the house or pit in the afternoon, and syringe the plants if the weather is fine. If green fly appears fumigate lightly.

From the latter part of September keep the soil rather dry, but not to let the young growth flag. About Christmas they may be pruned in the usual way—that is, if they are to flower in April and May. If wanted in March prune a fortnight earlier. Stop the ends with painters' knotting like Vines. Before starting, the top soil should be stirred and sprinkled with Clay's fertiliser or blood manure. As soon as active growth has commenced weak liquid manure may be given; the draining from a cowshed diluted to the colour of "husband's" tea is good, but that should be discontinued when the blooms show colour. The fire heat should be about 55° by day, 45° by night; the April and May Roses may have the fire heat turned off when the buds colour unless a severe frost occurs.

Mildew may generally be avoided by ventilating carefully and opposite the wind. For instance, mine is an ordinary lean-to pit facing south; well, with an east wind blowing I should put a small tilt under the west side of the lights, but if mildew should appear sprinkle the pipes with sulphur in the afternoon, start the fire, and damp the pipes with the syringe till the house or pit is filled with steam, then brush the loose sulphur off in the morning. The May-flowering plants will have to be shaded with thin canvas when coming into bloom. Very dark Roses open better under a mat at any time, as they scorch and turn blue. The instructions given apply principally to amateurs and gardeners like myself, who can afford only a pit to grow them in and are content with Roses in May. I learnt what I know of Rose-growing where bushes are grown 6 feet through, but the remarks apply equally to smaller plants; and if cultivators with little conveniences will try the method next season they will perhaps thank me for the few hints I have given when they see the plants that will be the result of the practice described. One more hint and I have done. Keep the plants open, and if any shoots as thick as your little finger start from the bottom of the stem, pinch the point out 6 inches above the plant and cut it level with the top at pruning time.—A. G.

Climbing Roses.

VAN DYKE, in his artistic introduction to Nature, writes that "The wild Rose—the common wild Rose—growing along the woodland road unseen by the farmer's boy and the summer tourist (there are exceptions in the case of the former), is a vision of loveliness beyond all description. How many times it has led poets to prove the poverty of language! With the dew upon it in the early morning, it is the fairest, purest growth in all the floral world." Of the native American species, the leading one of the climbing type is the Prairie Rose (*Rosa Setigera*, *Michx*), found generally in the central or prairie region. From it have sprung some of the choicest of climbing Roses, as Baltimore Belle, Prairie Belle, Queen of the Prairie, and later Crimson Rambler. They grow rapidly, will reach to a great height, propagate freely, present a satisfactory foliage, and when in bloom the attractiveness of the vines is complete.

And yet Roses are not at home in all parts of the country. In reply to the query, "Do climbing Roses prove of value for piazza screens?" there is a "No" for such States as Vermont, North Dakota, and Wyoming. They need to be covered in Colorado, Minnesota, and Wisconsin. Of the latter region, Professor Goff writes: "Last winter destroyed nearly all Roses, except the Russian *Rosa rugosa*, *Thunb.*" A climber with the rugosa blood introduced into it may bring a hardiness of great value. In Washington,

Professor Balmer writes that climbing Roses upon the west side of the Cascade Range "grow to the tops of two-storey houses, and all other Roses are a great success in that moist climate, while upon the east side they do not thrive. . . . All freeze within a foot of the ground . . . owing to the unripe condition of the wood. . . . It is a case of too short a season."

For the far South and Pacific Coast the Roses are among the most successful of climbers. In a recent talk with a Floridian it was gathered that Maréchal Niel, when budded upon the Cherokee Rose (*Rosa lævigata*, *Michx.*), climbs vigorously, and blooms almost constantly. Professor Rolfe writes for the same State that "the Maréchal Niel does so well and is so beautiful that it has no rivals." Of the extent to which climbing Roses are used in California many are familiar, for they reach to the tops of the houses, and bloom perpetually in many of the most congenial regions of that wonderfully diversified State.

In New Jersey there need be no lack of climbing Roses, and when trained with Honeysuckle and Clematis they give a satisfactory effect to the porch throughout the whole growing season. Think of a Crimson Rambler, as it may be easily produced alongside of almost any piazza.

lasting and unalloyed pleasure to be derived from the cultivation of gardens and care of flowers. In their hands it will be an admirable assistance.

The author has adopted the commendable scheme of including only the best prized and most generally grown garden flowers in the introductory pages, and these are discussed as regards their merits and culture. In this way the tyro is saved from an embarrassing prodigality for selection and consequent varied degree of merit. At the same time tables of choice plants, fruits and vegetables are provided at the end of the work, from which the garden lover who may have passed the elementary stages can avail himself or herself of more extended lists. It will convey an idea of the fair treatment that the more deserving plants receive in this book when we state that five and a half pages are devoted to the Auricula. Phloxes, Pansies, Irises, Pæonies, Poppies, Stocks, Pinks, and such other favourites have two or three pages each.

A perusal of the volume further brings to notice selections of the best annuals, and their simple treatment; also chapters on summer bedding, hardy climbing plants, bulbous flowers, the rock garden, Roses, Orchids, the lawn and its treatment; Ferns, both hardy and tender, greenhouse plants, fruit and vegetables, &c., not forgetting trees and shrubs. A chapter is separately furnished on the subject of town



PEGGED DOWN ROSES.
(See notice of "Gardening for Beginners.")

For the less favoured regions combinations of blood might be made between hardy and other sorts resulting in the production of highly prized hybrids.—("Bulletin 144 New Jersey Agricultural Experiment Stations.")

Book Notice.

Gardening for Beginners.*

THIS new book is one of the best we have recently had placed before us. It is at once beautifully designed, magnificently illustrated, and seems to us as complete as the beginner in gardening need wish it to be; indeed, the intending gardener, or tender of gardens, may feel some reservation before securing so bulky-looking a volume (for it runs to 495 pages, 9 inches by 5½ inches), but there need be no qualm in this connection, seeing each of the many sections into which gardening is divisible is treated fully, clearly, and separately; and to have "all-gardening" brought under review in one simple volume is surely the perfection of convenience. It is intended to guide that great and increasing multitude of women and men who have discovered the

gardening, so extensive in the present day. Besides these, the simple rotation work of the twelve months is suggested, and hints given. We observe that as a general rule the nomenclature is thoroughly up-to-date, and botanically and technically correct; but the generic name of *Cyrtomium falcatum*, to take one instance, is now *Aspidium*. Sir Walter Raleigh is credited with the introduction of the Potato into England. We believe it was really introduced into this country in 1586, by Thomas Heriot. Sir Walter Raleigh introduced it into Ireland. He knew so little about it that he tried to eat the poisonous berries. These proved noxious, and in having the plant rooted on the tubers of the Potato were discovered.

There are some useful diagrams, explaining the practice of all kinds of pruning, grafting, planting, and propagating. Those referring to pot Vines, and how they should be prepared for planting, give this operation more justice, and impresses how it ought properly to be done in a very decided way. On two of our pages this week we display typical illustrations from those included in "Gardening for Beginners." Of course, with specially stout and rolled art paper, the beauty and distinctness of these are heightened in the book. The illustration of the hardy Ferns vividly conveys how these fine subjects should be planted to produce the most fitting effect. The other portrayal shows what massive specimen bushes can be obtained from strong-growing H.P. and other Roses when their ripened shoots are pegged-down, or horizontally, instead of being cut hard back, as they almost universally are. The typography and paper are fitly in accordance with the handsome binding, which is strikingly ornamental. With all confidence we recommend "Gardening for Beginners."

* "Gardening for Beginners; a Handbook to the Garden," by E. T. Cook. "Country Life" Library. Published by Messrs. Geo. Newnes, Ltd., Southampton Street, Covent Garden, W.C. Price 10s. 6d. net.

NOTES

NOTICES

Weather in London.—Thursday, the 20th, was fine but dull. Friday was very muggy, and rained heavily in the evening and on Saturday morning. Throughout Saturday was hazy but agreeable, as was Sunday. Monday (Midsummer Day) gave some showers, yet was an exceedingly enjoyable day, Tuesday being likewise warm. As we go to press on Wednesday it is very warm, bright sunshine prevailing all day.

Weather in Ireland.—The early days of June were fine, but afterwards the atmospheric conditions were reminiscent of the dawn of February or March, cold, accompanied by fine drizzling showers; some of the days were bitterly cold, with sharp winds. This weather is by no means desirable for culture, yet it will have the advantage of checking the inroads of insect attacks, likewise checkmating fungus ravage, these require the warm days of summer to unfold their life history in their path of destruction.

Royal Horticultural Society of Ireland.—The annual Rose feature of the above society has been fixed for the 2nd prox. Although this date is considerably later than prior fixtures, the delay can easily be overlooked, owing to the excessive lateness of the season. The executive have engaged the Viennese Band, but it seems incongruous that counter attractions are needed to attract pilgrims to the shrine of Flora.

Royal Horticultural Society.—The Royal Horticultural Society's Rose Show will be held on Tuesday, July 2nd, in conjunction with the National Rose Society, in the Drill Hall, Buckingham Gate, S.W., 1 to 5 P.M. With the exception of plants, &c., shown for certificate, no other plants or groups, &c., except Roses, may be exhibited at this meeting. For schedule of prizes see R.H.S. Book of Arrangements for 1901, page 69. A lecture on "Mimetic Resemblances Among Plants, a Proof of the Inheritance of Acquired Characters," by the Rev. Prof. Geo. Henslow, M.A., will be given at three o'clock.

Fruit Prospects in 1901.—The fruit prospects in the Bedford neighbourhood are fairly good and promising. The season is late owing to the long continued north-easterly winds and frosts, but most kinds appear to have set fairly well, and are now beginning to swell freely. Apples of the Codlin type (Suffields), and Pippins, seem to do very well. Apricots on sheltered walls have set wonderfully well and are swelling satisfactorily, better than for some years past. Pears seem to have set better than usual this season. Most kinds of Plums have set fairly well, the Orleans and Victoria type seem to have set the best. Walnuts are a good crop. Raspberries and Strawberries and most kinds of bush fruit are plentiful. Most kinds of fruits want rain. Fruit trees generally are making free growth, and are freer than usual from grubs, though green fly is troublesome. The farmers' hay crop is very light, and most kinds of vegetables are suffering from want of rain on hot dry soils. On the 18th inst. a good deal of injury was done to Potatoes, Marrows, and Kidney Beans by frost in low-lying districts.—G. R. A.

Reading Gardeners' Mutual Improvement Association.—The June meeting of this Society was held, by kind permission of Colonel Baskerville, at Crowsley Park, Oxon, on Friday evening of last week, when between fifty and sixty members were present. The great feature, from the horticulturist's point of view, of this lovely old-fashioned residence is the "wild" garden, occupying about 15 acres, where Pæonies, Digitalis, Delphiniums, Poppies, Sweet Williams, Irises, Jerusalem Sage, &c., grow and flower in their own sweet way, not fearing knife or spade, and forming a picture not readily forgotten. After a pleasant hour had been spent here the party wended their way to the vegetable garden, stopping to inspect a magnificent Oak tree in the park, stated to have the largest stem in England. The borders of this garden are devoted chiefly to Roses, and the members were astonished at the luxuriant growth made. The trees had been allowed to grow wild, and although carrying an immense number of flowers, yet many of the blooms were fit for the exhibition table. At the close of the ramble a hearty vote of thanks was accorded to Col. Baskerville for the permission to hold the meeting in his grounds, and to Mr. Tubb, the gardener, for his interesting remarks respecting the plants noted.

Lectureship.—Mr. John Weathers, of the Silverhall Nurseries, Isleworth-on-Thames, has been appointed horticultural instructor to the Middlesex County Council.

Sandringham Appointment.—From a very good authority we learn that Mr. Thomas Cook, gardener to the Earl of Wemyss, Gosford, Longniddry, has been appointed gardener to his Majesty the King at Sandringham.

Appointments.—Mr. John McClean, late gardener to Otway Johnson, Esq., Kilgarry, Enniskerry, co. Wicklow, enters upon his duties as gardener to Col. Bayley, Ballyarthur, Woodenbridge, co. Wicklow, on the 8th of July. * * Mr. Wardle, late head gardener at Altadore, Glenageary, has been appointed to Sir Henry Hodson, Bart., Hollybrooke, Bray, co. Wicklow, as steward and head gardener, in place of Mr. J. McIntosh. * * Mr. Thos. J. Clarke, late steward and gardener to G. N. Edgeworth, Esq., Kilshowley, Edgeworthstown, in a similar capacity in the gardens of A. E. Wood Ryder, Esq., Parknamore, Ballincollig, co. Cork. These have been appointed by Sir James Mackay & Co., Sackville Street, Dublin.

Visit to Bedford.—On Monday last, Midsummer Day, a party numbering over fifty in number, by the kind invitation of the Messrs. Laxton Bros., the Strawberry and hardy fruit specialists, of Bedford, left St. Pancras, London, in a saloon carriage engaged by the Bedford firm to convey the party to their nurseries. Arrived at the grounds, an inspection of varieties was made, after which luncheon was enjoyed, and the company, having been photographed, seated themselves in brakes and waggonettes, thence enjoying a twelve miles' drive to the Duke of Bedford's Experimental Fruit Farm at Woburn, Ridgmont, where Mr. Lewis Castle is superintendent. We regret that lack of space obliges us to hold over a fuller report of the day's outing, and of the varieties of Strawberries whose varied merits were subjected to keen observation by the experts. A more enjoyable day's excursion, or a better arranged and executed programme than that of Monday last, could not be desired; everybody was thoroughly satisfied and, indeed, delighted.

North Kildare Gardeners.—The entries for the garden competition of the above Society for this year numbered 211, being an increase of ninety-five on last year. This is only the second year of the Society's operations, and during that time a wonderful improvement is noticeable in the gardens in the district, which is limited to a radius of ten miles from Straffan Bridge. The judging is divided into four districts. The following judges have been appointed, who will be assisted by the able hon. secretary, Mr. Geo. Paterson, Leixlip:—Clane and Straffan, Messrs. Black (Carton Gardens) and Boyle (Castletown Gardens). Celbridge, Maynooth, and Kilcock, Messrs. Shaw ("Irish Gardener") and Doyle (Palmerstown Gardens). Kill, Sallins, and Naas, Messrs. Bnrbridge (Trinity) and Reid (Lucan House). Leixlip and Lucan, Messrs. Rigg (Lyons Gardens) and Fagan (Celbridge Abbey Gardens). By kind permission of Lord Mayo the annual show will be held at Palmerstown, near Naas, on 31st July.

Meteorological Observations at Chiswick.—Taken in the Royal Horticultural Society's Gardens—height above sea level 24 feet.

Date.	Direction of Wind.	Temperature of the Air.				Rain.	Temperature of the Soil. At 9 A.M.			Lowest Temperature on Grass.
		At 9 A.M.		Day.	Night		At 1-ft. deep.	At 2-ft. deep.	At 4-ft. deep.	
		Dry Bulb.	Wet Bulb.	Highest	Lowest.					
1901.										
June.										
Sunday ..16	N.W.	deg.	deg.	deg.	deg.	Ins.	deg.	deg.	deg.	deg.
Monday ..17	N.W.	56.4	49.3	64.2	47.2	0.04	60.3	58.8	55.8	38.9
Tuesday 18	N.N.W.	56.2	48.7	60.9	49.3	0.03	59.6	58.6	55.8	38.0
Wed'sday 19	N.N.E.	51.9	46.0	63.0	45.5	—	58.3	58.4	55.8	39.2
Thursday 20	S.E.	60.2	51.8	68.0	37.5	0.06	58.7	58.0	55.8	27.5
Friday ..21	S.S.W.	56.4	54.3	67.0	50.4	0.01	59.8	58.2	55.7	49.7
Saturday 22	S.E.	67.1	60.0	76.3	56.0	0.15	61.2	58.2	55.7	57.0
		62.7	59.5	76.0	57.3	—	63.3	59.0	55.7	54.3
						Total				
MEANS ..		58.7	52.8	67.9	49.0	0.29	60.2	58.5	55.8	43.5

The weather during the past week has been dull, with frequent slight showers. There was a sharp ground frost on the morning of the 19th inst. The total rainfall recorded at Chiswick since April 16th is only 0.95 inch.



Autumn Sown Sweet Peas.

AN article appeared in the *Journal of Horticulture* for November 8th, 1900, under the above heading. It was written by Alger Petts, recommending autumn sown Sweet Peas, in preference to spring sown ditto. The system was as follows:—"Sow the peas in pots about the first week in November, and then put them in a cold frame, allowing them to remain there until about the middle of March, by which time the Peas will be from 2 inches to 4 inches high. They should then be planted in deeply dug, well manured ground." I think it would be very interesting if any of your many readers who may have adopted the above method of Sweet Pea growing, would be kind enough to give their opinions of the same. The Sweet Pea having taken such a prominent position, I feel sure that every particle of information concerning their cultivation would be welcomed, and eagerly sought after by every grower of this lovely flower.—A. W. C., *Devon*.

Shrewsbury Schedule.

To a casual reader, the controversy between Messrs. Crump and Iggulden, as published in the *Journal of Horticulture* of June 6th, would convey the impression that one or other of the combatants were fighting the Shropshire Horticultural Society on my behalf, which is not at all so. The arguments are more of the sword and spear than of the pruning hook and ploughshare type. I am sorry my name has been mixed up in the affair, entirely without my knowledge, and making it appear as if the great Grape class had been framed for my convenience and benefit, instead of being entirely open to all comers alike from any part of the world. I hope there will be a large muster of exhibitors, as it will be a reward for the present and encouragement for the future. I always consider it is a far greater honour to be awarded a minor position in a big competition than to be at the top in a small one; but it is a little uncertain at present whether I shall be in a position to compete, as the season until now has been against our chances. It is quite useless to hope to find a place on the prize list unless the very highest specimens of both cultivation and varieties are staged.

I was glad to see in last week's issue an official interpretation of the schedule by the honorary secretary, Mr. Adnitt, which will elucidate matters very materially were any doubt in existence as to what might or might not be shown. On first reading the schedule I quite thought an exhibitor could stage twelve bunches, "all different varieties," without any risk of disqualification, but only four bunches of any white Muscat, but these four could be one or more varieties, and the judges would treat them as one variety, let them be Muscat of Alexandria, Canon Hall, Bowood, or Tynningham Tokay; and this arrangement was made to prevent any dispute at the show.

The correspondence in last week's issue hints that some former complaint had been made by, or on behalf of, Mr. Taylor *re* Canon Hall's exclusion from the Grape class two years ago. I am glad to note that Mr. Taylor is likely to forget his threat some ten years old, and come amongst us again, for he is one of the best and most constant Grape growers we have of many years' standing. I trust he may stage some of the grand examples of Canon Hall he so graphically describes. I am not the only grower of Canon Hall Grape by a long way, but I have had many years' practice with it, and in many parts of the country, and I know no Grape that varies so much under different treatment.

The only true characteristic is the strong footstalks and sappy unripened growths, that remain quite green long after the fall of the leaf in autumn. This wood usually dies back to the old growth during winter. On taking charge of these gardens, hard on thirty years ago, I was pleased to find a Canon Hall Vine highly prized by the owners, as it was planted pretty well a century ago by some of their ancestors. I have supplied grafts and eyes from this old Vine over half the land. I have grafted it on numerous varieties of stocks, in the hope of making it more constant and reliable, and have had a fair amount of success. In some instances, however, both bunch and berries are so changed as to be almost beyond recognition, so under the circumstances perhaps the Shrewsbury committee do wisely in not admitting Canon Hall as a distinct variety from Muscat of Alexandria. As all are under the same treatment, we may console ourselves and show something instead. I may further add that I do not think the variety compensates the grower for the extra trouble it requires to perfect it, but so far as eating is concerned, it is decidedly the most luscious of all Grapes, and I can readily understand old connoisseurs becoming so infatuated with it.—J. H. GOODACRE, *Elvaston Castle*.

Copings for Walls.

MANY thanks to Mr. Challis for his reply to my question *re* coping. I think a width of 2 feet keeps nearly all the rainfall from the trees, which then become the abode of red spider, &c., &c., just as the trees would in a cool house if they were not constantly syringed and watered. If you have to syringe the trees under the fixed glass coping the cost of labour would vastly exceed the cost of putting up and taking down a movable coping, for an ordinary carpenter can put up and take down 100 yards of wood coping 1 foot wide (which I find sufficient) in one day. I infer that Mr. Challis incurs the great expense of constantly syringing all his protected wall trees, and would ask him whether, if such expense cannot be afforded, he would recommend a fixed or movable coping? Of course all trees must be syringed or sprayed occasionally to destroy insects or prevent the attacks of mildew, &c.—C. C. ELLISON.

National Rose Society.

I HAVE been looking forward with a good deal of interest to the National Rose Society's show in the Temple Gardens, and have looked to the advertisement columns week by week to ascertain the price to be charged for admission. In this, I presume to say, lies the answer to "D., Deal's," query in the leader of last week's *Journal* as to how Londoners will take it. If the committee of the Rose Society has decided to make the price of admission prohibitive (and anything above 1s. will be so to thousands), I think I shall be justified in saying that, as far as London popularity goes, it is doomed to failure. But if the society really wishes to cater for Londoners, let them advertise the show in the popular London morning papers, as the "Daily Mail," "Leader," and "Express," and ask these journals to place the information before their readers, that there is to be held in central London the greatest Rose Show ever seen, and that the price is only 6d., and I guarantee that London will come in its thousands, and you will have not only a popular success, but a financial one as well. There are thousands of workmen and women in London who would jump at the chance given them, but who would pass sadly by were the price of admission above the nimble 6d.—ONE OF THE CROWD.

Preserving Nature.

IT is a relief to see, from your issue of the 13th inst., that a movement has at length been set on foot in the western counties for the protection of Ferns and wild plants. Your same issue contains two paragraphs, entitled "Extermination of British Flora," and "The Raid upon Wild Flowers," both of which point to the necessity, not only for preservation committees all over the kingdom, but for general legislation on the subject. The hedgerows in my part of north-west Yorkshire, once redolent of Primroses, have now been depleted of that favourite flower, and my attempts to introduce fresh plants are rendered nugatory by being carried off the first season they are in flower. Within the last few years I have tried to introduce the Broom into our lanes to prolong the golden riches of the Gorse, but only yesterday I found that a passing waggoner had wantonly taken a fancy to my handiwork, and cut, and carried off in triumph on the top of his waggon, a severe titling of my beautiful flowering shrubs, making quite a parade of them as he passed through the village. He, of course, takes his stand on the law, which practically makes the hedgerows adjoining public roads a veritable "no man's land." I want to see that law altered.—E. O. M. F.

Should Exhibitors act as Committeemen?

MR. GEORGE WADESON, page 525, finds a grievance in gardeners who happen to be committeemen of a particular society being at the same time an exhibitor. What reason is there, I would ask, for their not being so? If Mr. Wadeson objected to an exhibitor acting as a judge in classes in which he was interested we could join with him, but in his capacity as a committeeman there is absolutely nothing to debar him from exhibiting, when impartial judges are engaged to adjudicate. We know of many gardeners who are committeemen of various shows, and who annually compete, but have never heard that other exhibitors suffered any injustice because of it. So long as societies engage judges, preferably strangers to the locality, to determine the relative merits of exhibits, it does not matter a jot who form the committee, whether they be exhibitors or non-exhibitors, and my experience teaches me that men experienced in the art of exhibiting make much the best committeemen, because their experience, bought by actual practice, is distinctly apparent in the schedule and regulations of the show. True, it does not require that all committeemen should be composed of exhibitors; that would be fatal to the progress of the work of the day, and this is, I think, their only objection.—W. S.

Florists' Flowers.

THE Auriculas will now, of course, be in their summer quarters, that is, in some places facing the North, and with a hedge at the back of the frames to ward off the sun. Little attention is required for them except to take care that they do not get dry, and that aphids does not attack them; the best way to get rid of this when it appears is to close the frame, and to fumigate with one of McDougall's fumigators. Now is the time to get in a good supply of loam for potting, using the top spit of the pasture about 2 inches deep. This will also be a good time to make additions to the list of varieties. The collection belonging to my friend, the late Miss Woodhead, has passed into the hands of Mr. Charles Turner of Slough; it contained fine plants of most of the choicest varieties, including those raised by her brother; but collectors will have to make haste, for they will very soon be snapped up.

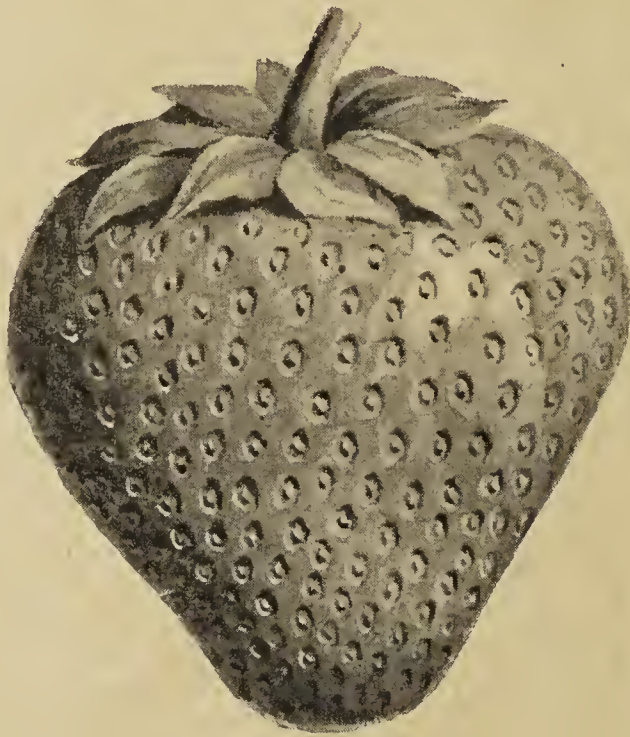
Carnations and Picotees, whether grown in pots or in the open border, will now simply require staking, but now that the desire for more decorative plants has arisen, and several stems are allowed to grow, they require more loose tying up. The dressing of exhibition blooms is most unnatural; but no matter how well a grower might cultivate his plants, it is hopeless for him to expect to gain a prize except he or some friend had the capacity for dressing the flowers. The zeal with which Mr. Martin R. Smith has followed their culture, and the generosity with which he has distributed to members of the National Carnation and Picotee Society his carefully hybridised seed, has led to a complete revolution, with a taste for more decorative plants for the garden, and consequently we meet with flowers of an enormous size, many of them very confused, and with colours and markings which shock the more bigoted adherents of the old school.

Gladioli have, of course, in most instances been planted, but it is even now not too late to plant corms which will bloom late in September. I was talking the other day with Mr. Burrell, the successful raiser and grower, and he told me he had some remarkable flowers both for size and colour, many of them being blue flowers. To those who, like myself, can look back between thirty and forty years, their development is remarkable. The flowers are five or six times as large as I can remember them of old, while instead of a spike of three or four blooms opening at a time, it is not unusual to find twelve, fourteen, sixteen, and even twenty flowers open at once. This has in no way made the flowers coarser, in fact there is no florist flower that I know of that has more thoroughly shown the intelligence and skill of the hybridiser than this. If only for the sake of tidiness or the preservation of the colour and cleanliness of the blooms, it is necessary that the plants should be staked.

"The droughty springs" that we have for some years experienced have told most unfavourably on the charming Persian Ranunculuses. Like all of the genus, the "Persians" delight in an abundance of moisture, and year after year, if they do not get moisture, the result is failure. When I took up my tubers last year I felt sure that the blooms of 1901 must be very poor; and so it has turned out, and I fear it is one of those cherished flowers whose culture I must abandon; in fact, their cultivation in the South of England is most difficult. They are not cultivated by any grower for sale that I know of, nor do I know where, since the death of Mr. George Lighthody, who had a magnificent collection. Many of the varieties were catalogued at half a guinea each, and some even at a guinea. I remember when even about London there were grand collections of these to be seen in places where now there are rows of mean houses, from whose surroundings everything pertaining to the country seems to be banished. Mr. Groom of Walworth had a beautiful collection, all traces of which have now vanished. There can be no doubt, I think, that the taste for florist flowers has diminished greatly in the South of England, and even in the North. Decoration is now all the rage, and the poor florist flowers do not afford that brilliancy of colour or stateliness of form which seem now indispensable to garden favourites.—D., Deal.

Strawberry The Laxton.

AFTER a period of eight years' successive watchfulness and selection the Messrs. Laxton Bros. of Bedford have been rewarded with a new variety of Strawberry, whose present qualities place it in the foremost rank and among the select few, of all-round, meritorious representatives. This new variety has been thought worthy by these Bedford Strawberry specialists of bearing their own name, for it is called "The Laxton." The party that visited Laxton's nurseries on Monday last without one dissentient voice spoke in unqualified praise of the newcomer, and at the Drill Hall meeting of the 18th inst. the Fruit Committee awarded a first-class certificate to this variety. As a bearer it is much above the average in prolificness. The fruits are firm, and consequently will travel well; they are very large, conical in shape, regular in outline, deeper in colour than Royal Sovereign, and have strong stalks. The flavour is very agreeable, luscious, yet piquant, which sharpens the palate. "The Laxton" bids fair to supplant even that excellent all-round variety Royal Sovereign, and we have faith in this prediction. No greater praise of its merits could be given. The parentage, by the way, combines Royal Sovereign and the tried Sir Joseph Paxton. It ripens ten to twelve days earlier than the former. The foliage is robust and well held up. It is probable that the stock will be reserved for another season.



STRAWBERRY THE LAXTON.

Societies.

The Royal Horticultural.

Scientific Committee, June 18th.

Present: Dr. M. T. Masters (in the chair); Messrs. Druery, O'Brien, Chapman, Saunders, Michael, Houston, Gordon, Holmes, Drs. Müller and Cooke, Prof. Church, Revs. Engleheart, Wilks, Wolley-Dod, and G. Henslow, Hon. Sec.; Visitor, M. H. Correvon, Geneva.

Abies hybrids.—Dr. Masters exhibited four specimens, all different, the result of a cross between *A. Pinsapo* and *A. Nordmanniana*, and one specimen between *Picea Alcockiana* (or *ajanensis*?) and *P. nigra*, var. *Doumeti*. This is remarkable for having the stomata on the upper side of the leaf, in correlation with the habit of the leaves lying horizontally with the upper surfaces downwards. The paper will be published in full in the Society's Journal.

Cornflowers diseased.—Mr. J. Laws sent specimens of *Centaurea cyanus* badly afflicted with "rust." Dr. Cooke reported upon it as follows:—"Plants of *Centaurea cyanus*, covered with rusty spots on leaves and stems, were sent to the Committee in a deplorable condition. This fungus, as far as present experience goes, is the same as that which attacks *Chrysanthemums*, and is called *Uredo Hieracii*. Plants in the condition sent should at once be rooted up and burnt. It will be well understood how dangerous it would be to have such a pest in the neighbourhood of *Chrysanthemums*, and probably others of the *Compositae*, to say nothing of the *Cornflowers* themselves."

Potamogeton crispum.—Mr. Mark Webster described a pond infested by this Pondweed. Cutting it down with a scythe, as practised, would only tend to propagate it still more. Mr. Correvon observed that the only method, as adopted in Geneva, to keep the Water Thyme, *Elodea canadensis*, in check, was to clear out the pond once in three years. Other members suggested the introduction of water snails, especially *Lymnaea stagnalis* and species of *Planorbis*.

Dendrobium dimerous.—Mr. R. Young of Liverpool sent a flower having only two petals and two sepals, a not uncommon form.

British Orchids.—Mr. Bowles sent specimens of *Liparis Loeselie*, as well as both white and pale varieties of *Orchis latifolia* var. *incarnata*, from Horning, Wroxham. The former is interesting, as showing the commencement of the inversion of the lip in Orchids generally. This petal in *Liparis*, at first erect and posterior, but then lies flat, so that an insect readily stands upon it. In *Ophrys* the lip becomes pseudo-anterior, by the flower simply bending over to the opposite side of the plant. In other Orchids the falsely anterior position is due to a twist of the pedicel, as in *Listera*, or else of the inferior ovary, as in *Orchis*. Mr. Bowles observes that the "*Liparis* is still plentiful at Horning, but owing to its dwarf stature, and the boggy nature of the ground in which it grows, it is easily overlooked. It thrives wonderfully well in an artificial bog made of Jadoo in my rock garden. The white form of

O. latifolia is very abundant, large patches sometimes occurring. *Listera ovata* (Twayblade) and *Ophioglossum vulgatum* also occur in a 'dancing bog,' and grow very large. I also send an albino *Pedicularis palustris*."

Tomatoes attacked by fungus.—Mr. G. E. Day sent specimens diseased with *Macrosporium Lycopersici*. It was in the young state. The best remedy is spraying with Bordeaux mixture.

Asplenium trichomanes, var.—Mr. Drury showed a plant of this Fern, which had several fronds partially bipinnate. It was found in Wales. It was interesting as exemplifying an attempt of a normally pinnate species to assume the form of an exotic one. The variety so far did not approach the incised section, which varies on quite different lines.

Papaver Rhæas, var.—Mr. Drury also showed flowers of a Poppy having an intense crimson colour, a native of Asia Minor. They were raised from seed brought from Smyrna, and have been growing spontaneously in a garden for two years at Acton. Each petal had a small black spot or line at the base.

or asci, each containing eight sausage-shaped sporidia (16–18 × 3–4 mm.), nearly of the same shape as the minute conidia, but many times larger, in which condition the fungus is known as *Valsa ambiens*, and has been found on Pear and Apple, but also on Maple, Beech, Hazel, Alder, Plum and Cherry, Elm, Oak, Hawthorn, Poplar, Chestnut, Lime, and even on Rose. Hence it is widely diffused and well known. It would be a dangerous enemy if once it became established as a parasite on living fruit trees. The mature condition may be found late in the autumn, in the winter, and the early spring."

Gloire de Dijon Rose proliferous.—Mr. Chapman exhibited flowers having their centres occupied by a green tuft of leaves, &c. He observes that of about two dozen plants, the whole of the flowers this year and for several years previously have developed the peculiarity.

Birch tree bark diseased.—Mr. A. Walker of The Croft, Needham Market, Suffolk, sent some specimens, which Mr. Saunders undertook to examine.

Cattleya Mendlei malformed.—Flowers were sent by Sir Trevor



WILD FERNS IN DEVONSHIRE.

(See notice of "Gardening for Beginners," page 539.)

Peach blister.—Dr. Bonavia sent leaves badly attacked by this common disease, *Exoascus deformans*.

Apple bark tendrils.—Mr. F. Marsh Read sent a piece of Apple bark covered with golden twisted threads. He observes that "the main stem for about 6 feet from the soil is 'ribboned' with it." Dr. Cooke reports upon it as follows:—"Portions of the bark of living Apple trees were sent for information. The bark was covered with long yellow tendrils or filaments, thin as a hair, and much contorted and interwoven together, presenting a very singular and conspicuous appearance. Upon examination a number of compound cells may be seen in the bark, each with an external orifice, from which the golden tendrils protrude. These tendrils are composed of myriads of very minute conidia, or spore-like bodies, adhering to each other as they extend, and are at first soft and flexible, but soon, on becoming dry, the tendrils are brittle and horny, or hair-like, variously twisted and contorted, little thicker than a human hair. The number of very minute spore-like bodies composing each tendril must be enormous (each 5 micromillimetres long, and slightly curved). The fungus has long been well known on pomaceous trees, but we have not met with it before upon living bark. It is known as *Cytospora carphosperma*. Later on the same pustules are occupied by a sphaeriaceous fungus, which is believed to be the ultimate development of this dimorphous organism, and in this condition each pustule consists of a few flask-like conceptacles or perithecia with rather long converging necks. These perithecia enclose numerous delicate cylindrical sacs,

Lawrence, as well as of *Odontoglossum*, which Dr. Masters undertook to report upon.

Thistle fasciated.—Mr. Houston showed an abnormally large specimen of this common monstrosity.

Richmond Horticultural, June 26th.

Yesterday the Old Deer Park at Richmond, Surrey, contained five great marquees, (there were close on a score altogether), within which were staged magnificent exhibitions of general horticultural produce, under the auspices of the above society. The Old Deer Park is an ideal place for a flower show. It is level, smooth, and open, lying between the River Thames and the pretty town of Richmond itself. The sphere of this horticultural society embraces besides Richmond, the parishes of Twickenham, Isleworth, Mortlake, East Sheen, Kew, Petersham, Ham, Barnes, and Roehampton—a whole district in fact, thickly dotted with aristocratic demesnes, and fine gardens. The nurserymen from around London can more or less all send their exhibits by road vans.

On this occasion the National Rose Society's southern exhibition was held in conjunction with the Richmond Show, so that Roses formed a very special feature. A finer day than that of Wednesday could not have opened, and we sincerely hope the Society's exchequer may have been well replenished. Last year was rather unfortunate in this respect. The plan of having the exhibits of each tent denoted by inscriptions on

the outside of the canvas is worthy of consideration by other show committees. Thus the floral decoration tent is indicated in red letters easily read, and so with those containing Orchids and herbaceous plants.

A number of exhibits were arranged in the open air by the sides of the tents, amongst the finest of which were choice groups of Japanese Maples from Messrs. Thos. Cripps & Son, Tunbridge Wells, and from W. Fromow & Sons, Chiswick. Messrs. Jas. Veitch & Sons, Ltd., Chelsea, again staged a collection of trained variegated Ivies, grown in pots. The schedule was in six divisions, including open and confined classes, and special fruit and vegetable sections. Certificates and awards of merit were awarded to new and rare plants and seedling florists' flowers. Forty-two special prizes were offered, and in a number of cases these were exceedingly valuable. £5, £3, and £2 were offered by W. Cunard, Esq., of Orleans House, Twickenham, in three prizes for a collection of six dishes of fruit; and the Mayor of Richmond offered 45s. as a first for twenty-four Roses, distinct, three blooms each. From nurserymen and seed firms monetary and medal prizes were also offered. Messrs. Sutton & Sons, Carter & Co., Robert Sydenham, and Kelway & Sons, were foremost in this connection. The society itself offered "special" prizes of 3 guineas, 2 guineas, and 1 guinea for a group of Carnations in pots, not to exceed 50 feet; and good prizes were offered in a class for six buttonholes, three ladies' and three gentlemen's. Others were also awarded. We mention these facts as showing what the Society on its side does, and surely the best production and skill from far and near ought to be enticed. The Richmond Show, indeed, is perhaps the finest in Surrey.

In the large Orchid tent, Sir Frederic Wigan, Bart. (grower, Mr. W. H. Young), arranged a magnificent collection of Orchids, each splendid sample of cultural skill. The group included *Sobralia macrantha*, *S. m. alba*, *S. Veitchi aurea*, *Laelio-Cattleya Lady Wigan*, *L.-C. Canhamiana*, *L.-C. eximia*, *Cattleya Mendeli*, *C. M. Lowiae*, a beautiful variety; *C. gigas*, *Epidendrum vitellinum*, *Cochlidia Noezliana*, *Aërides crassifolium*, *A. odoratum*, *Odontoglossum crispum*, *Cypripedium Dayanum*, *Phalænopsis grandiflora*, and the peculiar *Epidendrum (Nanodes) Medusæ*. Exotic foliage plants were also used. It was a grand group.

The floral decorations were nothing above the average; there were too many of the mere soppy and grass arrangements. One of the most pleasing features, however, was the groups of plants for competition, though there were but five of them. In Class I. (100 sq. ft.) the first prize was easily won by C. Swinfin-Eady, Esq., K.C. (gardener, Mr. Wm. Lock), Oaklands Lodge, Weybridge. His group was the finest ever seen at a Richmond Show, being arranged with a rustic arch in the centre and water beneath. The group was free and graceful, and most carefully finished. *Caladiums*, *Phyllanthus*, *Kalosanthes*, *Eulalia gracillima*, *Humea*, *Gloxinias*, *Crotons*, *Orchids* in variety, *Trachelium cœruleum*, and other choice plants, were tastefully employed. The second group was flat, but had good stuff. The other groups were mediocre.

Fruit was not a very large item. Grapes were of average merit; Melons were good, as were Strawberries and Cherries. There were some good dishes of Peaches. Messrs. Laxton Bros., Bedford, showed a box of Laxton's Leader and Laxton's New Mentmore. Both have berries of the largest size, handsome appearance, and good flavour. Vegetables were very good and clean, and well selected. Cottagers' produce was good. The National Rose Society's great tent was filled with the finest blooms. Exhibits of garden Roses were an especial feature. The total entries of the show numbered about 700.

Messrs. Geo. Jackman & Co., Woking Nursery, Surrey, staged Roses and a very large collection of herbaceous cut flowers. Messrs. J. Peed and Son, South Norwood, set up a magnificent group of hardy flowers. *Humea elegans* in full flower was effectively employed along with *Malmaison Carnations*, and fine bunches of *Pyrethrums*, *Achilleas*, *Dianthus*, *Papavers*, *Coreopsis*, and fifty bunches of Sweet Peas. Messrs. A. Young & Co., The Nurseries, Stevenage, had also a collection of Sweet Peas and hardy flowers; they staged a new *Campanula* named "Panchatata," a very distinct sort.

Another grand group of herbaceous flowers was sent by Messrs. Paul & Son, The Old Nurseries, Cheshunt. Their *Spiræa Aruncus plumosus*, and the beautiful *Morina longifolia* was very good. Messrs. Barr & Sons, of King Street, Covent Garden, were close by with Japanese pigmy trees, *Iris spuria*, *Phlomis cashmeriana*, a strikingly fine subject; *Colntea arborescens purpurea*, *Tropæolum polyphyllum Leichtlini*, Spanish Irises in great variety, with *Pæonies*, *Delphiniums*, &c. Messrs. Hugh Low & Co., Bush Hill Park, Middlesex, staged cut Roses, *Schizanthus wisetonensis*, and a very choice foliage and flowering group.

In the open air Messrs. Carter & Co. staged pigmy trees, and inside one of the largest tents they had one of the grandest groups of *Gloxinias* we have ever beheld. These were staged in the group and formed a magnificent show. *Petunias* were also included.

Mr. John Russell of Richmond had a well furnished group of splendid *Crotons*, in numerous first-rate varieties. By the *Croton* group was a mixed group of stove and greenhouse foliage and flowering plants. Messrs. Cannell & Sons, Swanley, were forward again with their unexampled *Cannas*, while almost by the side of the latter was a gorgeous group of *Malmaison Carnations* Princess of Wales from Leopold de Rothschild, Esq., Ascot, Leighton Buzzard. A particular

feature of the group was the inclusion of a few of this variety grown as hanging plants, in the Swiss style. The group represented 900 fine large blooms.

Messrs. J. Hill & Son, Barrowfield Nurseries, Lower Edmonton, had one of the finest groups of all the choicest and most lovely Ferns. A large group of hardy plants came from Messrs. T. S. Ware, Ltd. One of the finest plants shown was a scarlet *Begonia*, named Count Zeplin, a bedding variety. This variety we would recommend to all our readers. Messrs. J. Veitch & Sons, Ltd., staged a group of *Kalanchoe flammea*, better coloured than at the Temple Show, and a collection of H.P. and other pot Roses.

Royal Oxfordshire Horticultural, June 18th.

The seventy-first show of the Royal Oxfordshire Horticultural Society passed successfully in the beautiful grounds of the New College on Tuesday, June 18th. The weather was ideal, and in all respects a very good show was presented. The entries, we heard, were fewer than the average for June. The five large classes open to all England naturally formed one of the strong features. Two large marquees had been erected, that on the south lawn being 150 feet by 40 feet, and here the groups for effect were arranged. In class 1, for a group of stove and greenhouse plants there were two entries, both very effective, the premier card, £12, falling to Mr. Cypher, Cheltenham, who had very tellingly utilised any number of rare subjects on the 220 feet superficial. Amongst Orchids were grand plants of *Odontoglossums*, *Miltonias*, and *Dendrobiums*, of the last-named species were a pair of specimens of the noble Brazilian *Dendrobium Dalhousianum* with tall racemes of hood-like blossoms of dull nankeen with dark purple blotches; and among other bright bits of colouring were neat specimens of the popular *Begonia Gloire de Lorraine*, the surface of the tent being laid with moss; the whole design was beautifully edged with small Ferns, foliage plants, exotic Grasses, &c. The second card, £10, went to Mr. Vause, Leamington, whose arrangement was also very attractive, and the quality of flowering plants were fairly equal, but on the whole it was somewhat heavy in comparison with the premier group.

Mr. J. Mattock secured the first prize, amounting to £4, for a display of Roses, about 72 feet superficial; and also in class 3, for Roses. In this class the second prize fell to the Misses Coombes, who staged a magnificent exhibition. Mr. W. T. Mattock was placed third. We think there ought to be a special Rose decorative class for ladies only. Class 4, for a display of hardy perennials, brought out some very showy well-posed exhibits, demonstrating that the herbaceous border gives us some remarkable shades of colour. The only other open class was for a display of Sweet Peas, to be arranged on 60 feet superficial. Five competed, and the 300 feet space occupied presented a mass of colouring altogether imposing. It would be difficult to determine the number of varieties, but from sixty to seventy forms were presented. Mr. Walker's first prize display, which secured the £2 offered by Sir W. Markby (president of the society), was very effective, being set up in greater bulk than some of the collections from a distance. In the members' classes the groups of plants arranged for effect on 120 feet were very nicely finished, and contained a goodly number of greenhouse plants. The hardy Ferns made a feature, those from Chilswell, Ifley Road, being well developed. *Fuchsias* were limited to two groups.

Only one collection of Orchids was entered, consisting of very fine pieces of *Cattleya*, *Laelia purpurata*, *Odontoglossums*, *Oncidiums*, &c. At the entrance to the tent was a noble group of white, dark crimson and pale flesh *Malmaison Carnations*, backed by scarlet tree *Carnations*; these came from Blenheim Palace, and secured Mr. Aubrey Harcourt's prize of three guineas. Specimen plants were but few. For a stove plant, Mr. J. Mattock was first for a piece of *Anthurium Scherzerianum*. In the tent on the west lawn, the north side staging was entirely devoted to the members' classes for cut blooms, and very high quality was attained in the collections of *Iris*, *Pyrethrums*, perennials and Roses. For twenty-four single trusses the first card fell to Mr. R. E. West, Reigate, for a fairly level lot of buds; prominent among the Teas and Hybrid Teas were *La France*, *Cleopatra*, *Caroline Testout*, *Kaiserin Augusta Victoria*, *Princess of Wales*, *Captain Christy*, *Madame de Watteville*, *Caroline Kuster*, *Hon. Edith Gifford*, *Madame Hoste*, and *Comtesse de Nadaillac*. The Hybrid Perpetuals included good sized buds of *Captain Hayward*, *Dr. Andre*, *Madame Gabriel Luizet*, *Alphonse Soupert*, *A. K. Williams*, *Charles Lefebvre*, *Comte Raimbaud*, *Marquise Lita*, *Countess of Rosebery*, and *Antoine Rivoire*. Mr. John Mattock was a close second.

The collections of bunches of perennials were altogether good, and the bulk were grandly posed. Mr. Walker scored a premier for a shower bouquet. Fruit was a small section. Melons were in plenty; Peaches and Nectarines small, but the Royal Sovereign Strawberries looked tempting. Vegetables included some large sized Tomatoes, and the Cucumbers were all fit; the brace of Sutton's "new" variety in the members', and those in the amateurs' (Lockie's Perfection) were simply perfection. The collections of vegetables entered for Sutton's and Webb's prizes were wonderfully good, but in the arrangements there was a sameness. Mr. W. J. Myers was first for a group of Orchids, covering 24 superficial feet. For *Gloxinias* Mr. A. V. Luffrey won; for *Begonias* Mr. W. T. Mattock, and for *Pelargoniums* Mr. J. Johnson. For a collection of eight kinds of vegetables we found Mr. R. W. Hudson first, and Mr. J. R. Tranter second.

Shirley and Districts Mutual Improvement.

The monthly meeting of the above association was held at the Parish Room, Shirley, on Monday, 17th inst., Mr. B. Ladhams, F.R.H.S., in the chair. Minutes of last meeting were read by the hon. sec., Mr. J. Miles, and confirmed. The Chairman then called on the lecturer, Mr. J. Weathers, F.R.H.S., Silverhall Nursery, Isleworth (late assistant secretary to the R.H.S., lecturer to the Middlesex C.C.), to give his lecture on "Is it Necessary to Grow Plants in Pots under Glass?" Mr. Weathers started by saying that there were more ways than one of killing a cat, and that people were beginning to wake up to the fact that there were more ways than one of growing plants. The lecturer opened up quite new ideas with regard to plant culture, speaking from experiences gained at Kew, Chiswick, and on the Continent. He gave the members his experience in the planting out system as practised at his nursery at Isleworth, saying that all gardeners would have to use their own discretion in the matter of potting *versus* planting out. Whilst the advantage of the latter plan was admitted, where it could be resorted to, it was considered that pots could not be altogether dispensed with. A good discussion followed, in which Messrs. Jones, Mitchell, and the chairman took part. The following awards were made for twelve cut Roses, not less than six varieties: First prize, J. W. Fleming, Esq., Chilworth Manor (gardener, Mr. W. Mitchell); second prize, Mr. F. Cozen, Rownhams; first-class certificate, Mr. G. Gardner, twelve Roses, and Mr. B. Ladhams, collection of Pinks. Four new members were admitted. A vote of thanks to the lecturer, chairman, and exhibitors closed a very enjoyable evening. The subject for next lecture, July 15th, "The Cultivation of Liliums," by Mr. E. Ladhams, Shirley Nurseries—J. M.

Royal Institution, June 8th.

Professor J. B. Farmer gave the second and last of his lectures on the "Biological Characters of Epiphytic Plants" at the Royal Institution last Saturday. Some plants, he explained, began life as epiphytes, and later made connection with the earth. The seed of the common Indian rubber Fig usually germinated in the fork of a tree; the roots grew down the trunk to the soil and were firmly glued to the bark by a cementing substance; any excess of cement was reabsorbed, the roots coalesced and soon enclosed the tree, causing its death. The Fig continued its existence as an individual. In one epiphytic Anthurium the leaves formed a sort of funnel in which vegetable detritus accumulated, sometimes to the amount of 20 or 30 lbs., and in this solid matter the roots ramified. In a Fern called *Drymoglossum* the root hairs stood absolute drying up, and when moistened new root hairs sprang from the bases of the old. In *Polypodium quercifolium* one kind of leaf manufactured carbohydrate food, while another kind resembling Oak leaves were addressed to the bark, forming pockets in which humus accumulated, and in which the roots ramified. *Platycerinm* also had two sorts of leaves; one for assimilation, and one which, though becoming dead and brown, collected nutriment and water. Liverworts showed very diverse adaptations, and occurred wherever there were epiphytes; they covered leaves or even grew on one another. In *Gottschea* the leaves folded over one another and held water by capillary attraction. In one species of *Physotium* the leaves consisted of two lobes; one, acting as a gutter, conveyed water into the other, which was hollowed out and provided with a valve to prevent the escape of water. In *Physotium acinosum* there were large sacs at the apex of the stem, which in most species contained the spore-bearing organisms, but had here become for the most part water reservoirs. *Frullania*, in addition to ordinary leaves, had pitcher-like leaves, which held water, and in which small organisms lived. Lichens endured unlimited drying, and very little moisture served to swell them out and make them gelatinous. Only plants with small seeds or spores could attain to an epiphytic existence. After Krakatoa was blown up, the whole island was covered with red hot cinders. Three years after these were overgrown with a gelatinous alga, in which new vegetation, chiefly Ferns, had taken root. The spores had had a distance of twenty-five miles to cover, and only the smallest kinds could be borne so far. Few, even of small-seeded plants, could become epiphytes; success depended upon the adaptability of the individual to change of environment.—("The Times.")

College Gardens, St. John's, Oxford.

THE springtime is considered by many to be the prettiest time of the year. The gradual development of the manifold forms and hues of the foliage of the varied trees lends a charm to the eye and a picturesqueness to the landscape, with a freshness and beauty that cannot be described. On an inspection of the above gardens a few weeks ago Nature seemed to have put forth her very best efforts, the varying hues of foliage, and huge towering Chestnuts in full bloom overhanging a magnificent and well-kept lawn, with an array of herbaceous plants in bloom in the borders and beds, presented an indescribable picture.

The following are some of the things which are of interest to lovers of gardening, and which are to be seen at St. John's in the highest form of cultivation:—Tulips galore! Amongst the many varieties we may note Sunset, Early Dawn, Barbara, Semiramis, Lydus, Royal White, Firefly, Dorothy, Rose Queen, Prince George, Violet Queen, Lord Duncan, Zandrowitch, Salmon King, Mabel, John Morley, Phidias, Joseph Chamberlain, Gengiskhan, Rev. H. Ewbank, Wm. Wilson, Mrs. Moon, Zephyr, Columbus, Martin's Rectified, Hamlet, Apricot, vitellina, Cordelia, Ruby, Attraction, corona lutea, and Nora Ware. Of species *Didieri lutescens*, *linifolia*, and *persica*. Amongst the hundreds of kinds of herbaceous plants grown, some of

which are represented by a score of varieties, the following are of especial interest to the visitor:—*Achillea argentea* and *A. tomentosa*, *Actæa spicata*, *Adonis vernalis*, *Ajuga reptans purpurea*, *Alchemilla argentea*, *Arabis alpina*, *A. alpina flore-pleno*, *Armerias*, *Arnebia echioides*, *Asarum europæum*, *Asphodelus luteus*, *A. ramosus*, *Astrantia major*, *Ranunculus aconitifolius*, *Camassia esculenta*, *Centaurea montana*, *Cheiranthus alpinus*, *Dryas octopetala*, *Epimedium colchicum*, *E. macranthum*, *E. niveum*, *E. pinnatum*, *Eremurus robustus*, *Erinus alpinus*, *Fritillarias*, *Geraniums*, *Geum coccineum*, *G. Eldreichi*, *Globularia trichosanthes*, *Heuchera sanguinea*, &c., *Hieracium aurantiacum*, *Hippocrepis comosa*, *Hutchinsia alpina*, *Iberis coriifolia*, *Iris Fieberi*, *I. pumila*, *I. Florentina*, *Lithospermum prostratum*, *Megasæa*



THE GARDENS OF ST. JOHN'S COLLEGE.

crassifolia, *Morisia hypogæa*, *Omphalodes verna*, *Onosma tauricum*, *Ornithogalum nutans*, *Orobis vernus*, *Phlox Nelsoni*, *Polemonium coeruleum*, *P. himalaicum*, *P. repens*, *Ramondia pyrenaica*, and many other choice plants which it would be wearisome to name in detail.

The effective arrangement of the trees, shrubs, and herbaceous plants must have entailed much forethought, and reflects great credit upon the garden superintendent, the Rev. H. J. Bidder, an ardent and enthusiastic horticulturist. He is most ably supported by Mr. W. R. Bowells, the head gardener, who is thoroughly conversant with the requirements of the various plants under his care. The condition of the garden at this season testifies to the intelligence and care lavished upon it by those responsible for its keeping, as it forms one of the most beautiful of the many lovely College gardens which so embellish and distinguish the University City.—S. EATON.

Town and Country.—Everyone is crying out in the country for rain—rain for the crops, rain for the hay, rain for the flower garden. Ladies in London who want to wear their pretty summer frocks rejoice when day after day the streets are dry, the sun shines, and they can take air in open carriages. At the fruiterer's they may make their choice of beautiful fruit; at the florist's they can buy flowers, dear, perhaps, but perfect and odorous, and it is only when perchance they pay a visit to the country that they note the want of rain. The town-dweller forgets the seasons; they are pretty nearly all alike to him, such are the resources of civilisation and the possibilities of commerce.

Early Summer in Warwickshire.

Of all parts of rural England few surely can excel the beautiful and historic region of Warwick and Kenilworth. Turn whichever way your inclination leads you, all is lovely and abounding in hosts of interest. Such a spring as the one now past, and such an early summer following suit, is presumably of very rare occurrence indeed. Brilliant days from early morn to late evening, with cool and dewy nights, and a bracing and refreshing breeze by day, aided by a just sufficient rainfall about once in two or three weeks, seems to have brought about a wealth of fresh foliage, and a maximum of flower and blossom seldom equalled, and possibly never surpassed. What the harvest will be in fruit, grass, and corn, *qui vivra verra*; but verily the promise is great, the position pregnant with possibilities; and of the first named, if one excepts the Apple crop, which was universally a bumper one last year, a prolific supply seems almost assured.

In the writer's own little niche and coign of vantage, and so far as his observation round about these parts goes, Plums, Damsons, and Green Gages should be excellent, Pears abundant and heavy, Apricots a full crop, Currants and Gooseberries ditto, and Strawberries, now that a bountiful rain has come, if only the blackbird and slug to some extent cease from troubling, a magnificent one. Thus with the Lilac, Laburnum, and May fast passing away (and what an abundant show they have been!) and Philadelphus and Berberis in full flower, with all the fruits of the earth coming to maturity and approaching perfection, there is much to cheer and hope for besides the bright blue skies and glorious sunshine, which seem to set all things living in unison with their charms. As regards Strawberries, of some dozen and more varieties, not one kind has shown any lack of a full spread of bloom, and all alike have set with extraordinary universality. No black eyes this time. King Frost for once seems to have ignored this pet victim of his. A curious incident, which may be mentioned *en passant*, is that an entire bed of British Queen last summer had no blossom, and consequently no fruit at all. The whole lot were apparently barren, the foliage, however, making up by extra luxuriance. They were accordingly doomed, and destined to be rooted up *in toto*. Through stress of work, and owing to the writer leaving for the winter rather early in the autumn, the contemplated sacrifice was not carried out. With a good deal of interest therefore, and a greater amount of satisfaction, the whole plantation this summer are observed to be in full bearing, and promise a complete recompense for their misdeeds of a year ago.

Before leaving the subject of this favourite fruit, it may be said that in a light loam soil, and with no special attention in the way of rich dressing, Monarch, Leader, and Sir Joseph Paxton appear to give the best results, the first two affording monster specimens, while a Dutch kind, which was brought over from Amsterdam two Aprils ago carries off the premier palm for producing the earliest dish. For some years the plan of putting the plants all down the borders both sides of the paths has been pursued with excellent results, and increased facilities alike for weeding, picking, netting, and tending the sets generally. In leaving the subject of fruit, the landscape around these parts must be alluded to. It has often been said that the road from Coventry to Warwick is one unsurpassed for beauty and variety by any other in England. Be this as it may, and comparisons are proverbially odious, it is in any case a remarkably fine one. Seen under such auspices as the present season, with side views among the bowers of pink May, golden Laburnum, and white or purple Lilac in such truly rural and delightful villages as Merriden, Hampton-in-Arden, Allesley, or Ashow, with their greenery of Oak leaf Copper Beech (save the Irishism), Sycamore, and Cedar, the fascination of a late spring or a midsummer sojourn in these parts is one not lightly to be deemed as capable of being improved upon.

The drive or walk through Stoneleigh is a revelation in itself, and a feast for the eye to dwell upon. Through the liberality of its venerable and noble owner, the six miles of parkland can be traversed in its entirety at all times. Leaving the undulating rises and falls of the somewhat hilly deer park, with its magnificent and massive timber hoary with age, a beautiful flat and open expanse is enjoyed till the white stoned Abbey, with its turrets and gables, is past, to lead to other glories after passing over the picturesque bridge spanning the Avon, as you emerge into a drive of another mile or two embowered with Rhododendrons on either side. Not far from this estate, and immediately off the main Warwick road, is that exquisite gem in landscape views, Guy's Cliff. Of historic (and prehistoric) interest, the scene where, as the story goes, Sir Guy killed the dun cow, a monster, the huge bone of which is still, I believe, preserved in Warwick Castle, bewitches one. With the old mill behind you, and great boulder stones to lean or sit upon, immediately beneath you is the millstream, spreading out into a broad mere or lake, with swans and Water Lilies riding stately upon its waters, and carrying your eye over their charms to the proud and lordly pile beyond, a feudal stronghold of picturesque and imposing appearance.

Yet but a mile or so further, and a similar distance from the modern and fashionable Spa of Leamington, another ancient castle raises solemnly and grandly its massive walls, her towers and castellations keeping guard, as it were, over the silent river and meads below. The view from the bridge over the Avon, towards Warwick Castle, is too well known to be enlarged upon here. So, too, is the immense ruin of Kenilworth, but a short distance in the opposite direction, the favourite happy hunting ground of brother Jonathan, in whose eyes the attractions of the ancient seal of the famous Earl of Leicester form a formidable rival to even the mystic spells of Stratford-on-Avon in this same county, conjuring up, as is inevitable, ideas of the scene of the great water pageant in the mere, now dry, but easily traced still, where the imperious Faerie Queene was entertained by her unfortunate favourite of the moment. Space forbids touching on many other spots, almost, if not quite, as interesting for their natural beauties or sacred memories of yore.—J. A. CARNEGIE-CHEALES.

Royal Horticultural Society.

Examination, 1901.

THE annual examination in the principles and practice of horticulture was held on April 24th, 225 papers being sent in. Three hundred marks were allotted as a maximum, and all candidates who obtained 200 marks and upwards were placed in the first class. The total number was 109, or 48.4 per cent. The highest number of marks, 290, was awarded to Miss Ella M. Watkins, from the Horticultural College, Swanley, Kent. Those who secured 150 and less than 200 marks were placed in the second class. The number was 85, or 37.7 per cent. Those who obtained 100 marks and upwards were ranked in the third class. The number was 25, or 11.1 per cent. Six candidates, obtaining less than 100 marks, were not placed. Comparing these results with those of the last two years the entry has slightly decreased—viz., from 236 in 1900, to 225 in 1901; both are, however, greatly in excess of the number of entries—viz., 165 in 1899.

It will be noticed that the percentages have fallen in the first and third classes—viz., from 60 to 48 in the former, and from 13 to 11 in the latter; but in the second class it has risen from 26 to nearly 38, that is as compared with the results of 1900. The lowering of the percentages of the first class may be attributed to a slightly increased difficulty in some of the questions, more especially in the "principles." It was felt by the examiners that the "requirements" drawn up some years ago scarcely met the increased knowledge of many students, especially when prepared at the various horticultural colleges. A new syllabus of botanical requirements will be issued for 1902. The decrease in the percentages of the third class is a good sign, as it indicates a greater preparedness in the majority of the examinees.

It is very satisfactory to report that the steady improvement in the answers to the questions in the "practice" continues, although there is still room for improvement in some directions. Some candidates had full knowledge of the elementary principles, but failed altogether when they came to the practice. Candidates would do well to remember that a gardener may rise high in his profession with little or no knowledge of the composition of plants or trees, and may never have heard of phloëm or xylem; but cannot possibly do so unless he knows—when and how to repot choice plants; the rotation of crops in the kitchen garden; the best kind of fruit trees to plant and the right time to plant them, and so on.

Some of the candidates could not name a succession of varieties of Pears, and did not know the name of even one stewing Pear. Some of them would sow Scarlet Runners in March in rows 2 feet apart. No gardener will ever attain a high position in his profession unless he is careful to obtain a full practical knowledge of the minor details of garden work; as—e.g., how to handle a spade or lay down a rake. A novice usually lays down the latter with the teeth upwards, and will shock the sensibilities of a well-trained gardener by the way he stands over his spade. Without any doubt it is well that students should have as much knowledge as they can possibly obtain of the elementary principles; but this can never take the place of the practical part, which should be studied quite as freely, and especially in and by actual practice.

(Signed), GEORGE HENSLOW.
JAMES DOUGLAS.

First Class

No. of marks gained.	No. of marks gained.
1 Watkins, E. M., Swanley... 290	[Adams, L. L., Lady Warwick Hostel ... 245
2 Squire, E. F., Swanley ... 280	Balch, A., Polmont Station, N.B. ... 245
3 { Ardington, M., Swanley ... 270	Bedell, E. W., Swanley ... 245
Shrubshall, A. H., Essex ... 270	Chandler, A. E., Guildford ... 245
{ Clapham, V. H., Swanley... 260	Fleischmann, M. D., Ilkley ... 245
Cooper, J. J., Walsall ... 260	Gandy, L. A., S. Devon ... 245
5 { Goffin, L. L., Essex ... 260	Henderson, A., Swanley ... 245
Sansom, M., Wimbledon ... 260	Leyshon, R., Oxon ... 245
{ Creswell, W. T., Oxford ... 255	Peacock, F., Lady Warwick Hostel ... 245
9 { Wright, F. D., Lady Warwick Hostel ... 255	Rendle, A., Essex ... 245
Draper, H., Swanley ... 250	Thomson, B. D., Swanley... 245
11 { Jones, W., Wanstead ... 250	
Nicholson, G. O., Harboro' ... 250	

First Class (continued).

	No. of marks gained.		No. of marks gained.
Atkins, T. L., Hinekey ...	240	Critchison, N. M., Swanley ...	215
Brooker, H., Guildford ...	240	Fenoulhet, S., Swanley ...	215
Cull, A., Milnthorpe ...	240	Jackson, B., Swanley ...	215
Hall, H., Hertford ...	240	Johns, R., Berks ...	215
Hanson, L., Swanley ...	240	Little, H., Essex ...	215
25 { Herring, L. K., Swanley ...	240	Martin, T. M., Oxford ...	215
Humphrey, L. J., Essex ...	240	Murrell, M., Lady Warwick ...	215
Johnston, J., Edinbro' ...	240	65 { Hostel ...	215
Law, C., Lady Warwick ...	240	Salway, S. J., Stafford ...	215
Hostel ...	240	Saunders, B., Essex ...	215
Wright, E., Swanley ...	240	Schattner, K., Swanley ...	215
Cornelius - Wheeler, B. R., ...	235	Shimmons, O., Dewsbury ...	215
Lady Warwick Hostel ...	235	Smith, E., Swanley ...	215
Dowie, T. M., Lady War- ...	235	Tiekner, A. E., Godalming ...	215
wick Hostel ...	235	Wallas, C. M., Swanley ...	215
35 { Geary, G. Burbage ...	235	Buttenshaw, W. M., Swan- ...	210
Maera, L. E., Swanley ...	235	ley ...	210
Meyler, K. G., Swanley ...	235	Cook, L. J., Bush Hill Road ...	210
Parker, J. W., Holmes ...	235	Grundy, S., Swanley ...	210
Chapel ...	235	79 { Huekle, M. J., Kingston- ...	210
Usher, M., Swanley ...	235	on-Thames ...	210
Billington, F. H., Holmes ...	230	Muscott, W., Oxford ...	210
Chapel ...	230	Pownall, F., Stafford ...	210
Blencowe, J., Kingston ...	230	Taylor, W. G., Dideot ...	210
Canning, R. L., Wrexham ...	230	Butler, E. W., Swanley ...	205
Coleby, H., Reading ...	230	86 { Jones, P. L., Reading ...	205
Creaser, W., Leeds ...	230	Peache, F. W., Swanley ...	205
Landsberg, M. H., Lady ...	230	Stone, F. C., Guildford ...	205
Warwick Hostel ...	230	Blaber, J., Guildford ...	200
42 { Maera, M. G., Swanley ...	230	Buck, C. H., Swanley ...	200
Piggott, W. H., Oxon. ...	230	Clayson, J., Ampthill ...	200
Sandys, A., Reading ...	230	Creasy, B., Essex ...	200
Swift, J. W., Stafford ...	230	Davidson, W., Corbridge- ...	200
Unwin, M. W., Lady War- ...	230	on-Tyne ...	200
wick Hostel ...	230	Dines, J., Essex ...	200
Williams, T. O., Holling- ...	230	English, M., Swanley ...	200
worth ...	230	Higgs, K., Reading ...	200
Wimpress, H., Swanley ...	230	Humphrey, H., Swanley ...	200
Bateman, G., Oxon. ...	225	90 { King, R. G., Swanley ...	200
Carlyon, M., Lady Warwick ...	225	Kinnear, K., Swanley ...	200
Hostel ...	225	Lewis, F., Swanley ...	200
55 { Coutts, W., Stonehaven ...	225	Marriott, E. E., Godalming ...	200
Marriott, W. E., Hinekey ...	225	Nash, A. W., Oxford ...	200
Rabjohn, H., Aylesford ...	225	Pugh, B., Birmingham ...	200
Scott, L., Holmes Chapel ...	225	Selden, G. P., Reigate ...	200
Webster, J. J., Skelton-in- ...	225	Smith, T., Ayr, N.B. ...	200
Cleveland ...	225	Stoney, J. G., Liverpool ...	200
62 { Colville, K. J., Wolver- ...	220	Stonhouse, E. M., Lady ...	200
hampton ...	220	Warwick Hostel ...	200
Nudds, H., Oxon. ...	220	Woodroof, C., Chelmsford ...	200
Whetham, V. S., Swanley ...	220		

Second Class.

Bayliss, I., Oxon. ...	195	Beckett, W., Holmes ...	175
Brown, S., Notts ...	195	Chapel ...	175
Burton, M. E., Portobello ...	195	Duguid, M., Swanley ...	175
Cundy, C., Suffolk ...	195	147 { Lyon, R., Strathaven ...	175
Hughesdon, M., Lady ...	195	Martin, H., Holmes ...	175
Warwick Hostel ...	195	Chapel ...	175
110 { Mason, A., Essex ...	195	Nichols, H. R., Oxford ...	175
May, B., Essex ...	195	Blaekshaw, A., Holmes ...	170
Palmer, J., Darlington ...	195	Chapel ...	170
Robb, A., Essex ...	195	Cole, T., Oxford ...	170
Swainson, W. T., Swanley ...	195	Denman, J., St. Asaph ...	170
Taylor, L. W., Farringdon ...	195	Gilbey, G., Essex ...	170
Berry, O., Holmes Chapel ...	190	Harrison, F. A., Oxford ...	170
Cobbold, H. M., Swanley ...	190	Hughes, C. F., Oxford ...	170
Draper, M., Swanley ...	190	Hunter, T., Kingston Hill ...	170
121 { Edwards, C., Aber- ...	190	Jacobs, L. L., Swanley ...	170
gavenny ...	190	McDonald, A. J., Jed- ...	170
Leighton, F., Wootton ...	190	burgh ...	170
Bassett ...	190	152 { Matthews, W. A., Oxford ...	170
Grace, M. F., Lady War- ...	185	Mitchell, F., Oxford ...	170
wick Hostel ...	185	Moore, W. E., Holmes ...	170
Horne, A. J., Highgate ...	185	Chapel ...	170
Road, N.W. ...	185	Pitman, E. B., Notting- ...	170
Lester, T., Holmes Chapel ...	185	ham ...	170
126 { Morris, T., Burry Port ...	185	Rigold, S., Swanley ...	170
Paul, F. F., Essex ...	185	Sibley, J., Dulwich Com- ...	170
Pearee, A. J., Reading ...	185	mon ...	170
Proctor, H., Reading ...	185	Sumner, A., Holmes ...	170
Sefton, W. C., Holmes ...	185	Chapel ...	170
Chapel ...	185	Trollope, T., Bicester ...	170
Smallwood, G. Y., Hants ...	185	Bishop, R., Plumstead ...	165
Carlyon, C. M., Swanley ...	180	Brown, H. W., Surrey ...	165
Dodd, W. E., Holmes ...	180	Donoghue, J. F., Hull ...	165
Chapel ...	180	McKechnie, W. C., ...	165
Hicks, W., Liskeard ...	180	Brecon ...	165
Ingles, M., Essex ...	180	169 { Pruce, H., Witney, Oxon ...	165
Lee, J., Wigan ...	180	Reux, F., Chichester ...	165
135 { Madelin, M., Redhill ...	180	Rolfe, T., Essex ...	165
Mallard, H. J., Stafford ...	180	Wright, J. R., Caterham ...	165
Murray, E., Lady War- ...	180	Valley ...	165
wick Hostel ...	180	177 { Allison, W., Stafford ...	160
Rushton, J. C., Stafford ...	180	Young, E., Kingston Hill ...	160
Slade, R., Ormskirk ...	180		
Smith, F., Upper Caterham ...	180		
Smith, M. M., Swanley ...	180		

Second Class (continued).

	No. of marks gained.		No. of marks gained.
Champhess, E. H., Car- ...	155	179 { Watson, J. W., Fulwood ...	155
sharleton ...	155	Dolphin, A., Chesterfield ...	155
Evans, W. N., Holmes ...	155	Gibson, J., Swanley ...	150
Chapel ...	155	Hough, W., Audenshaw ...	150
179 { Hargreaves, J. T., Bolton ...	155	Jay, P. C. H., Carshalton ...	150
Head, G. H., Exeter ...	155	Morrell, K., Swanley ...	150
Holford, G., Stafford ...	155	Powell, E. H., Swanley ...	150
Minty, J., Cookham ...	155	Wilson, T., Derby ...	150
Peoples, F. W., Bolton ...	155		

Third Class.

195 { Miller, M., Swanley ...	145	205 { Hunter, J., Liverpool ...	125
Sibley, C., Wimbledon ...	145	Jolley, E., Hants ...	125
Heald, C., Holmes Chapel ...	140	Polkinghorne, F. J., Bod- ...	125
Jenkins, A. R., Stafford ...	140	min ...	125
197 { Johnston, Lady Warwick's ...	140	Backhouse, A., Oxford ...	120
Hostel ...	140	Liekman, R., Kingston- ...	120
Shaw, J., Tottington ...	140	on-Thames ...	120
Taylor, W. R., Surrey ...	140	Speneer, J., Warwick ...	120
202 { Kirkman, A., Bolton ...	135	Field, J. D., Witney ...	110
Maekay, M., Swanley ...	135	Long, H. B., Oxon ...	110
Miles, H. W., Oxon ...	135	Brooks, A., Swindon ...	105
205 { Boorman, H. G., Oxford ...	125	Goble, W. E., Epsom ...	105
Chapman, G. M., Wimb- ...	125	Grantham, W., Aughton, ...	105
don Park ...	125	Ormskirk ...	105
Girling, J. A., Reading ...	125	219 { Englefield, G., Wimbledon ...	100

Scholarships.

Sir Trevor Lawrence, Bart., President of the Society, and Master of the Worshipful Company of Gardeners, very kindly offered a scholarship of £25 a year for two years, to be awarded after the examination of the Royal Horticultural Society in 1894, to the student who should pass highest, if he were willing to accept the conditions attaching thereto. The main outline of these conditions is that the holder must be of the male sex, and between the ages of eighteen and twenty-two years, and that he will study gardening for one year at least at the Royal Horticultural Society's Gardens at Chiswick, conforming to the general rules laid down there for students. In the second year of the scholarship he may, if he likes, continue his studies at some other place at home or abroad which shall be approved by the Master of the Worshipful Company of Gardeners, and by the Council of the Royal Horticultural Society. A similar scholarship was presented by Baron Schröder, V.M.H., after the 1895 examination. The Worshipful Company of Gardeners continued this scholarship to the end of 1896. Another similar scholarship was given after the 1897 examination by N. N. Sherwood, Esq., V.M.H., Master of the Worshipful Company of Gardeners. Another was given for 1898-9 by G. W. Burrows, Esq., a member of the Court of the same Worshipful Company of Gardeners. Another was given for 1899-1900 by the Right Hon. the Lord Amherst, who presents it also through the Gardeners' Company. Another is promised for 1901 by Henry Wood, Esq., which will be continued in 1902 by F. G. Ivey, Esq., both gentlemen being members of the Court of the Worshipful Company.

SCHOLARS:—

1894-5-6 ...	Mr. W. N. Sands.
1895-6-7 ...	Mr. G. F. Tinley.
1897-8-9 ...	Mr. H. S. Langford.
1898-9 ...	Miss Harrison.
1899-1900 ...	Mr. C. J. Gleed.
1900-1 ...	Mr. B. Smith.
1901 ...	Mr. Charles H. Buck.

If the student who is at the head of the examination is for any reason unable or unwilling to accept the scholarship, it is then offered to the next highest on the list, and so on throughout the first class. And in case of two or more eligible students being adjudged equal marks, the Council reserve to themselves the right to decide which of them shall be presented to the scholarship.

To Help the Gardeners' Royal Benevolent Institution.—

Through the kindness of Sir Henry Miles the gardens at Leigh Court were recently opened for one day to the public for the benefit of the local branch of the Gardeners' Royal Benevolent Institution. Unfortunately the otherwise welcome showers of the afternoon interfered with the attendance somewhat, but, considering the weather, a goodly number were present, the brakes which ran from Clifton at intervals of a quarter of an hour being well patronised. On arrival at Leigh Court the great attraction was, of course, the magnificent Rhododendrons. The grounds generally were looking very nice, and the specimen and ornamental Firs and Cedars, just now throwing out their young spring growths, were much admired. The vineries and Peach houses showed some very promising crops, and great pleasure was found by the visitors in wandering about the pleasure grounds, with their ornamental ponds covered with Water Lilies, now in full bloom. The place is also noted for its walls—so necessary for choice wall fruit—now well set with Apricots, Peaches, and Cherries. The evening turned out fine, and the drive back pleasant, but the exchequer of the institution had not benefited to the extent that could have been desired, and probably would have done had better weather favoured the occasion.



Hardy Fruit Garden.

Summer Pruning.—Summer pruning of various fruit trees, comprising wall, bush, cordon, and pyramidal forms, is an operation which, on the whole, can be extended over several weeks with general advantage. Some trees are benefited more by early attention in subduing and regulating, while others may remain later in order that their excessive vigour may somewhat expend itself, and thus prevent the likely possibility of secondary growths starting from the basal buds. Apples, for instance, do not require so early summer pruning as Pears and the majority of stone fruit trees, nor is it necessary to prune or shorten shoots of large and established trees so early as cordons, which depend mainly upon a continued fruitful condition by systematic attention from the period when full sized basal leaves are formed.

Apricots, Peaches, and Nectarines.—The first fruits to be dealt with, if they already have not had some attention, which they should have had ere this, are the above. Superfluous, but well placed shoots may, instead of being cut out entirely, be shortened to three leaves, thus enabling them to form spur growths. Upon the whole, however, this form of pruning should not be practised to any great extent, seeing that these fruits—Peaches and Nectarines especially—bear so well on young well-ripened growths which have been laid in from the previous season. Therefore, let the summer pruning be chiefly directed towards securing a sufficiency of growths, one from the base of each fruiting shoot, to take the place of the latter when the crop has been gathered, serving the purpose. If not convenient to do this in all cases, suitable growths may be found in other positions, laying them in full length close to the wall or trellis. Avoid, however, gross shoots on the one hand, or those lacking vigour on the other. Other growths on the fruiting shoots may be gradually dispensed with, but the aim must be, if the early and necessary disbudding has been neglected, not to cut long growths out so as to cause a decided check. Carefully going over the trees at frequent intervals will obviate this. The leading growth on fruiting shoots may be stopped two or three joints above the fruit, though if the growth is weakly do not stop at all. Trees that have been properly disbudded and attended to from the first require but little at the present time. Where gross growths are seen to be pushing rub or cut these out entirely, maintaining legitimate growths well secured, so as to receive the benefit of ample light and air.

Plums and Cherries.—Where the summer growths on wall and restricted trees are numerous thin out the weakest entirely. Shorten the rest to three leaves. It is not always desirable to shorten the whole of the growths to form spurs, as Plums are prolific if a certain amount of young wood is allowed to form, laying it in in vacant places, when it will fruit the second year, if not the first.

Morello Cherries are like Peaches and Nectarines, most prolific on young ripened growths of the previous year; therefore lay these in freely with the view to furnishing the space with some of these growths. Superfluous shoots may be shortened to three leaves to form spurs, but a large proportion of such will not be required, and these only in the best positions.

Standard Plums and Cherries require no pruning in the way of shortening shoots. Thinning out crowded branches may be carried out after the crops have been gathered.

Apples and Pears.—A commencement may be made in shortening the shoots in the upper parts of the trees, dealing with cordons, bushes, and pyramids. Weaker shoots, and those towards the base, may be left a little later, or to the last. On strong shoots leave four leaves, six on those less vigorous. Where there is a mass of growths thin out the weakest.

Outdoor Figs.—Figs on walls or gable ends having made free growth must have some reduction made in the number of shoots if these are too numerous. Retain those of a stout and short-jointed character and lay them in full length. The fruiting shoots may be pinched a few joints above the fruit where the growths are strong. Weakly but fruitful shoots will not require stopping.

Outdoor Vines.—The side shoots bearing the fruit ought all by this to be laid in and stopped one or two joints beyond the bunches. Sub-laterals when they push, pinch to one joint. Lay in strong growths from the base for future bearing.

Red and White Currants.—Continue or complete the summer shortening of these, as the growth is invariably made early, and the sooner now it is restricted the better for the benefit of the fruit, which is likely to be much covered up by foliage prior to the summer pruning. In all cases, whether the trees are growing as bushes, or on walls or fences, the method of pruning is the same—namely, shortening the growths to three pairs of leaves. The leaders may be left entire, also a few growths from the base to furnish new branches if necessary.

Gooseberries.—If grown on walls and fences summer shortening of shoots is necessary in a manner similar to Red Currants, so as to favour the production of fruit buds close to the main stems. Bushes in the open are mainly grown in a less formal manner, this method always resulting in securing a crop when spur-pruned bushes are liable to fail owing to the loss of buds in winter by birds.

Strawberries.—The protection of the crop from damp, mildew, slugs and birds, must be attended to. To avoid the former evils the trusses of fruit should rest upon dry, clean material, such as long straw, slates, or glass, or be supported by forked sticks. Birds can only be kept from ripe fruits by nets, which should be supported over the beds by a framework of laths or wires. Trusses of fruit swelling prior to colouring may be fed by liquid manure, which should not be of a thick and muddy character, the sediment from which will be likely to stain the fruit, but clear and readily absorbed.

Fruit Forcing.

Peaches and Nectarines.—*Early Forced Trees.*—When these are very early and continuously forced to have the fruit ripe in May and early in June, the energy of the trees is severely taxed. It is necessary, therefore, to rest the trees, and re-invigorate them as much as possible, without inducing too much lateral growth or even starting the blossom buds, or some of them. We have occasionally had trees of the Early York race blossoming in late August and early September, they being started at the New Year. This we attributed to the manurial matter being in excess of the elaborating functions of the leaves, and also to the early maturity of the buds, the varieties being early bud formers. The house, after the fruit is all gathered, should be ventilated to the fullest extent, and when the wood is sufficiently matured the roof-lights may be removed at the close of the present month, or earlier. In other cases ventilate to the fullest extent, and duly attend to watering the borders, not allowing them to become too dry, and not giving needless supplies, as the former tends to premature maturity of the buds and the latter to a late growth, or even ill-health in the trees, by too wet, sodden, and sour condition of the soil. Keep the laterals clean by occasional syringing, and, if necessary, apply an insecticide. Laterals must be stopped, but a little growth insures steady root action, and prevents the buds and foliage maturing too early. All shoots that have supported fruit, and are no longer required, should be removed, in order to let air and light freely to the growth, and if there is too much crowding of the growths, thin the shoots for next year's bearing judiciously.

Young Trees.—Disbudding is an essential in the early stages of growth. The principal branches or shoots to form them should be 12 to 15 inches distance apart, and the shoots for bearing disposed about 15 inches asunder along last year's wood, stopping them, if necessary, at that extent of growth, and the laterals to one joint as produced; the extension, or main shoots, should be trained in their full length, provided they are evenly balanced. Any gross shoots may be stopped, as they are a great inducement to gumming. Ventilate early in the day, increase it with the advancing temperature, leaving on a little air constantly. Essential growths must be trained so that sun and air have free access to them.

Preparing Strawberries in Pots for Forcing.—Success in forcing Strawberries depends greatly on strong and well-matured plants. Two methods of securing them are in vogue. One is to layer the runners in 3-inch pots, half plunged between alternate rows of one-year-old fruit-bearing plants, which leaves space for gathering the fruit of the parents and watering the runners. The pots are filled within half an inch of the rim with rough, turfy loam, pressed firmly, and an indent made in the centre of the pot about half an inch deep, the first plantlet of the runner placed therein, secured with a peg. The point of each runner is cut off just beyond the plantlet, and the soil kept moist; the runners will be well rooted in about three weeks. Five-inch pots are employed for plants to be started before, or with, the New Year, 6-inch pots for those to be started afterwards. Broken oyster shells are excellent drainage, but half-inch bones are best avoided, as they encourage pests. Loam from turves cut 2 inches thick, where the soil is of a friable nature, and stacked until the herbage has decayed, forms a substantial part of the compost. The turf should be torn up roughly, or in pieces of 1 or 2 inches, and to it be added a fifth of well-decayed manure free from worms, or sweetened horse droppings, also a half-pint of soot and bonemeal, with a pint of wood ashes to every bushel of the loam and manure, incorporating the whole well together, and having the compost neither dry nor wet, but moist for ramming firmly. Place some of the roughest portions of the compost on the drainage, ram it, and add enough so that when the plant is introduced the base of the crown will be three-quarters of an inch below the rim of 5-inch and 1 inch of the 6-inch pots. Place each plant exactly in the centre of the pot, ram the soil hard, just covering all the roots, and having the whole of the plant to the base of the leaves above the soil. The site for the plants must be open to the sun and air, but sheltered from winds, and the standage of such nature as to exclude worms, 6 to 9 inches of ashes forming a good flooring for the plants, which should stand just clear of each other, keeping all runners pinched off and removing weeds. Water is required carefully at first, just keeping the soil moist, and in the evening of hot days sprinkling the plants. When well established in the pots copious supplies of water are required, never allowing the leaves to flag or making the soil sodden.

The second mode, and that usually adopted by growers of forced Strawberries for market, is layering in the fruiting pots. When the plantlets form on the runners and show incipient roots they are layered on duly prepared compost in the pots, and are left until they are well rooted. Some consider a stronger plant is thus secured.

Yet a third method is adopted—that of detaching the plantlets with an inch or a little more of the wire above and below each runner. Pots for fruiting the plants in are previously prepared by draining, filling with soil, making very firm, and watering. The portion of runner below the plantlet is pressed down in the centre of the pot till the pushed roots are just within the soil. The pots are stood in the open, frequently sprinkled by means of hose pipes, and thus the plants become established. This method is the quickest, but the plants are not as fine.

As regards varieties, La Grosse Sucrée and Royal Sovereign are excellent for starting by or before the new year; Keen's or Sir Harry, and Empress of India, are superb for main cropping; and President, well done, still splendid. Sir Joseph Paxton, though somewhat liable to mildew, may usually be relied on, being handsome; as also is Sir Charles Napier. For quality and good all-round properties Vicomtesse Hericart de Thury holds its own, though having a rival in Souvenir de Bosuet. Auguste J. Caisse has very large crimson fruit, is of compact habit, bears abundantly, and forces well. For late use, none equal British Queen, or its close ally Dr. Hogg.



•• All correspondence relating to editorial matters should be directed to "THE EDITOR," 12, Mitre Court Chambers, Fleet Street, London, E.C. It is requested that no one will write privately to any of our correspondents, seeking information on matters discussed in this Journal, as doing so subjects them to unjustifiable trouble and expense.

Pinch of Salt (R. E.).—Your cowman is perfectly right. All animals except pigs and fowls require salt. When cows are out at grass we prefer to put a piece of rock salt in the pasture, so that they may help themselves. Some farmers always salt their hay while making it, or, rather, stacking it, and others use quantities of salt in the chaffed straw or cut meat. Cows need more salt when in confinement than they do running out. The Canadian winter is far longer than ours, and the cows will be fed much on concentrated food, hence the regular salt ration.

Weeds in Garden (J. T. A.).—The weed you send is named *Equisetum arvense*, commonly called Horsetail. The *Equisetums* are usually found on moist loose soils. They produce slender underground rhizomes, from which shoots of fresh growths continually spring up. They are allied to Ferns and Club Mosses. Eradication is a matter of time, and patient, persistent effort. Liming may have a beneficial effect, but will not absolutely rid the land. The most reliable way would be to trench the land and carefully gather every scrap of root and stem. This would require to be done for a number of successive seasons. If any reader can suggest a better method, will they let us know?

Black Spots and Blotches on Grapes (Nemo).—The small black spots are due to a minute fungus, *Gloeosporium ampelophagum*, which occasions the disease known as anthracnose or Grape rot. It is not common in Britain, and seldom does more than produce greyish spots bordered by a dark line, and in the centre appear black points, which are the "fruits" of the fungus. Beyond this stage the disease does not spread in vineries, at least such, so far, has been our observation, though the affected part may become depressed and have the appearance of a mild form of scalding. The safest means of preventing the disease spreading is to dust the Vines—shoots, leaves, berries—with flowers of sulphur, repeating at intervals of ten days if the disease continues to spread. A small quantity of quicklime should be mixed with the sulphur on the second application, and the quantity of lime should be increased on each successive application until the proportions of lime and sulphur are nearly equal, always keeping a little more sulphur than lime. This will act well also against mildew, of which, however, we failed to find any trace. In the winter, when the Vines are at rest, say after pruning, they should be dressed with a solution of sulphate of iron, 1 lb. to 1½ gallon of water, applying by means of a clean, half-worn paint brush, to the rods and spurs. The relatively large blackish brown blotches are due to some substance applied to the berries, and thereon resting for some time, has caused the destruction of the cuticular and even epidermal cells. The insecticide you name, used too strongly, would produce the blotches.

Time to Visit Kew Gardens (T. B.).—Personally, we think Kew Gardens are lovelier and more interesting between the first week in May and the third in June than at any other period. However, as the time is now gone for seeing the beautiful Rhododendron dell and Azalea garden in flower, you would do well to come about the middle or end of August. The London parks are then also fairly well furnished, and the effect of the bedding combinations may be judged.

Poor Grass in Pasture (A Thirty Years' Subscriber).—The Grass is the common or fine Bent (*Agrostis vulgaris*), and occurs abundantly in poor meadows and pastures, also as a weed in arable land, though not then having the tufted appearance as sometimes occurs in pastures, in consequence of cattle not eating it. The Bent Grass would certainly disappear to a great extent by manuring, 20 tons of half-rotted farmyard manure being applied in the autumn or early winter. In February, or as soon after as the ground is thawed, a dressing of ground rock salt, 5 cwt. per acre, may be applied, which will have the effect of sweetening the herbage, thus rendering it more palatable to cattle. Failing the farmyard manure, we advise a dressing of the mixture recommended in the *Journal of Horticulture*, which we are pleased has been of service, the 10 acres dressed with it still having a good bottom and a good crop for the season. Under the circumstances we do not advise the breaking up of the land and cropping it with something else for a year or two, as we consider the herbage would be greatly benefited by manuring, the Bent Grass being discouraged, and the better Grasses and Clover correspondingly encouraged.

Melon Leaves (Novice).—The leaves are affected by the Cucumber and Melon mould fungus, *Peronospora cubensis*, although there are very few outgrowths—a very delicate white mould here and there on the under surface, yet the mycelia's hyphae is rampant in the tissues, and its advance marked by the yellowish discoloration on the line separating the living from the destroyed portions of the respective leaves. The fungus is most abundant during damp weather, especially when accompanied by relative cold. In a high temperature and not too damp and close atmosphere the disease does not appear, and even under relatively dry conditions of atmosphere and a high temperature at times, such as 90°, 95°, or 100° from sun heat, the disease is arrested, the destroyed portions of the leaves falling out after drying up and shrivelling, and the plants swell off and ripen their fruits. The disease is confined to the leaves, hence treatment should be restricted to them. Spraying with dilute Bordeaux mixture (1 lb. copper sulphate and 1 lb. quicklime to 12½ gallons of water) is perhaps the best means of keeping the fungus from spreading, taking care to reach the under side of the leaves, which is not a difficult matter with plants on a trellis, and reachable from below; but not an easy affair in the case of plants in pits and frames, yet it must be done. In most cases, however, fungicides in powder are easier applied under glass than aqueous ones, such as Anti-blight, Fostite, and Strawsonite, they being readily dusted on, under side or over, by means of the Malbec bellows; suffice to very lightly coat the under side of the leaves. We advise a well-ventilated atmosphere, especially in the early part of the day, closing early in the afternoon, so as to run up to 90°, 95°, or even 100, admitting a little air before nightfall, so as to allow the pent-up moisture to escape, and prevent the atmosphere from becoming very moist in the morning before air is admitted, this being attended to early, or from 75°, not to lower, but allow heating with the sun gradually.

Crops Unsatisfactory on Newly Trenched Ground (Scottie).—There is no question of the trenching being a mistake, the good top spit soil being placed at the bottom, and the bottom spit brought to the top, thus practically the nutrient matter is beyond the reach of seedlings in their early stages of growth, and in consequence they are doing indifferently. Of their future doing there is no question, for when the roots reach the manure placed between the top and bottom spits, and also the good mould of the top spit turned to the bottom of the trench, they will receive the needful support, though certainly not profiting to the extent that would have attended keeping the good soil on the top. The proper course to have taken would have been to bastard trench the land. The width of the trench being taken out, and also the top spit of the next trench, then the bottom spit of the second trench placed at the bottom of the first trench, after breaking up the bottom of this with a fork or pick, if very hard and stubborn, then applying the manure, and on this the top spit from the third trench, thus keeping the good ameliorated soil on top. In ordinary bastard trenching the trench is only taken out one spit deep, and the bottom broken up; on this, top of the next trench is pared off thinly in case of grass or turf, and placed in, and then the top spit immediately beneath the paring off. Manure can be placed on the broken up bottom. Either plan would have been better than burying the good soil, and thus rendering the ground relatively sterile. Only a good dressing of stable or, preferably, farmyard manure, will restore the soil to fertility, 20 tons per acre not being too much. The dressing with slaked lime, 1½ ton to about 2 acres, would not account for the indifferent doing of the crops, though it certainly would not improve matters, there not being any, or very little, organic matter to act upon. The manure, if applied in autumn, should be about half rotted, and if in early spring thoroughly rotted. The most likely article to profit the crops immediately is nitrate of soda, crushing finely and applying 2½ cwt. per acre, 1 lb. 2 ozs. per rod, or a little over ½ oz. per square yard. It should be applied when the crop tops are dry, but the ground moist, it being advisable to keep it from the hearts or centres of the plants as much as possible.

Nicotiana affinis (D. F. F.).—Nothing uncommon in your plants living through the past mild winter out of doors in a sheltered place. Although treated as an annual, it is really perennial.

Tomato Fruit Diseased (F. W. C.).—The fruits are affected by the Tomato black rot fungus, *Macrosporium tomatum*, which causes the disease known as "black stripe," or blotch on the fruit and sometimes stems and leaves of Tomatoes. (See full reply to "F. N." on page 510 of last week's Journal, June 13th, 1901.)

Names of Plants (H., Guildford).—1, *Lycaste aromatica*; 2, send Roses to specialists; 3, *Cistus ladaniferus*. (F. P. B. O.).—*Ornithogalum nutans*. (J. A.).—1, *Asclepias curassavica*; 2, 3, 4, 5, Irises, but shrivelled beyond recognition; 6, *Polemonium caeruleum*; 7, *Geranium ibericum*. (J. D. H.).—1, *Æthusa Cynapium*, Fool's Parsley; 2, *Apium graveolens*, Wild Celery. (Novice).—1, *Aloe frutescens*; 2, *Begonia natalensis*; 3, *Adiantum pedatum*; 4, *Sedum sarmentosum variegatum*; 5, *Pellionia Daveauana*. (Hill).—Yonr No. 4, unnamed last week, is *Encaphalartus* sp. (—).—*Holboellia latifolia*, climbing plant. (R. S. T.).—1, *Philadelphus microphyllus*; 2, *Lonicera Periclymenum*. (J. Harrison).—*Polygonum sachaliense*. (J. F.).—1, *Hoya imperialis*; 2, *Echium callithyrsum*; 3, *Eurya japonica variegata*; 4, *Exacum zeylanicum*; 5, *Sarracenia flava*. (F. W.).—1, *Jacランダ ovalifolia*; 2, *Hakea crassifolia*; 3, *Cestrum elegans*; 4, *Tacsonia Buchananii*.

Next Week's Events.

Friday, June 28th.—Ventnor (I. of W.) Exhibition.

Saturday, June 29th.—Windsor and Eton Rose Show in Eton College grounds; Canterbury Rose Exhibition.

Tuesday, July 2nd.—R.H.S. Committees (Roses); Sonthampton Exhibition (two days); Hereford Rose Show.

Wednesday, July 3rd.—Hanley Horticultural Fête (two days); Croydon Horticultural Society's Show; Farningham Rose and Horticultural Society's Show.

Thursday, July 4th.—Temple Gardens (N.R.S.); Norwich Rose Show.

Phenological Observations.

JUNE 28TH TO JULY 4TH.		PLANTS DEDICATED TO EACH DAY.
28 Fri.	Wasp beetle seen.	Blue Cornflower.
29 Sat.	Water Chickweed flowers.	Yellow Rattle.
30 Sun.	Great horsefly seen.	Yellow Cistus.
1 Mon.	Blackberry flowers.	Agrimony.
2 Tu.	Rooks roost on their nest trees.	White Lily.
3 Wed.	Dog days begin.	Wood Mallow.
4 Thr.	Wood Leopard moth seen.	Copper Day Lily.

Trade Catalogue Received.

Messrs. Dammann & Co., Seed and Bulb Growers, San Giovanni a Teduccio, near Naples, Italy.—*Bulbs, Roots, and Terrestrial Orchids.*
Laing & Mather, Kelso-on-Tweed.—*Carnations.*



Edinburgh, Glasgow, and Adjacent Parts.

WHEN you can combine business with amusement, when you can learn valuable facts and see fair tracts of country, when you meet old friends and make new ones, you cannot be said to have spent your time in vain. We have often referred to the benefit of travel, when combined with an observing mind and retentive memory. We have read of people posting through the most beautiful scenery of Europe, wholly engrossed in a yellow-backed novel; we have known people whose sole recollection of their outing seems to be of the luck they met with at hotels, of the cuisine different or indifferent, and of the various billiard tables on which they played. Now, there are among us a certain set of earnest-minded men who annually (last year was missed we fancy) take a journey, and make a tour of about a week's length into fresh districts, just to see how the dairy interest and farming generally flourishes there. They are men very intent on business, men very anxious to learn a better way than their own (if there is one), and men of rather more than average intelligence. They take in their train scientists and propagandists, and they beguile the hours when they are not inspecting, with lecture and debate. This year they took a northerly route, and visited the two cities named at the head of this paper, with the adjacent parts. These are two great cities, teeming with inhabitants—the one the modern Athens, famed

for its beauty and the deep learning of its citizens, and of those who call it their Alma Mater; the other of more modern growth, and wholly given up to money-making in all its branches, always forging ahead, always on the alert to grasp fresh opportunities. Both towns naturally require vast quantities of milk, and both are very particular as to the character of the milk they consume, and both differ radically. We can put the case in a nutshell. Edinburgh takes its milk warm from the cow; Glasgow will have no milk but that which has been pasteurised. Certainly there is a great difference. Dare we say one milk may and can be full of germs, and the other positively free?

There has been a great objection urged against pasteurised milk, and that is that the natural fresh taste is removed, and that it has a dull insipid cooked flavour. It is safe milk at any rate. Now, the Glasgow folk have got it safe, and they have managed to make it safe, but not insipid; at least, one of these travellers tells us that after a careful sampling a party of them were fain to confess (rather against their will) that the milk had lost none of its natural flavour. The system is this. The milk is not allowed to cool, but is kept at a temperature of 160° Fahr. for twenty minutes, and then cooled as rapidly as possible. The hot milk falls into an intermediate tank, and forms an abundant froth, which serves the important purpose of preventing the formation of a skin. No wire or muslin strainers do the work so thoroughly of removing sediment as does the centrifugal motion of the separator, and through that it is passed. One question much discussed was whether by any system of pasteurisation the milk did not become more or less indigestible. Now, is it better to have milk a trifle indigestible, or to run the risk of germs? That is a question for us individually to decide. We believe there is a good deal of nonsense talked about the dangers arising from impure milk. The milk is not impure when it reaches the customer. The customer is the person at fault; his dirty vessels, his close larders, and his general carelessness make the trouble.

Now, Edinburgh people will have no pasteurised milk; it is to come to them straight from the cow, and they take the milk of 20,000 cows daily. These cows practically live in their stalls, and are hand-fed; they are fed up the day they come in, and when about dry are sold off to the butcher, and their place taken by a new one. We heard of one dairyman who milks 100 cows, selling off four fat and taking in four fresh cows every week. This seems to us an awful system of waste, but the men say they have no accommodation for cows dry, and when they have got the best of the milk they, being fit for the butcher, must go. Now, we have always held that the best way to make a dairy herd was to breed from the best milker, and so build up a family. It beats us to know where the perennial supply comes from. It is impossible that they can be picked cows; it must rather be a cow, and nothing else. The Glasgow milkers are Ayrshires; Edinburgh favours the Shorthorn type.

Work on the Home Farm.

For the makers of Clover hay it has been a trying time; the weather has been fine as a whole, with just sufficient heavy showers to undo all the haymakers' efforts. A good deal of Trifolium and Clover is down, and has been for ten days or a fortnight, but we have not seen a new stack raised as yet. Several pieces are in cock, and they have lumped up better than they were expected to do, but as these early crops had not been grazed, and got well away in spring, so suffering less from the drought in May, they must not be taken as representative of the general acreage.

The showers had done practically no good, and the land was as dry and ironbound as ever until yesterday, when we had a really nice rain of something like 0.75 of an inch. This has greatly benefited both the crops and the working of the land. With the surface both warm and moist the later Turnips will be sown under most favourable conditions; certainly less seed may be sown than would have been advisable without this rain. The air is full of advice to farmers how to prevent or exterminate the Turnip fly. We are still of opinion that good tillage is the only antidote; but we have noticed that farmers who make a great noise about the ravages of fly are identical with those who scorn to sow more than 1½ lb. of Swede or 1 lb. of common Turnip to the acre. Flies never hurt a thick row, because there are so many more plants to deal with, and also because little Turnips grow much quicker when they are thick enough to keep each other warm.

Inquiries made at market as to the Mangold crop show that its very moderate condition is widespread. Few farmers report even a fair plant, and none have got the plants hoed yet. Weeds have been rampant, and almost smothered the young plants before they could be side-hoed. The nitrogen intended for the slow-germinating Wurtzels acted marvellously on the noxious weeds.

Sheep pastures have gone off very rapidly, and markets are full of sheep, quite overstocked in fact, and prices are very low. What a chance for a daring speculator, for there will be a Turnip crop this season without doubt. The trade for fat lambs is affected by the low price of older sheep, and there should be plenty of good lamb in the shops at 9d. or less.

Corn generally gets dearer when farmers have sold out, but trade is flat notwithstanding a poor prospect for both grain and straw.

